City Farming, 10th & Vine

THE green scene

HORTICULTURE IN THE DELAWARE VALLEY

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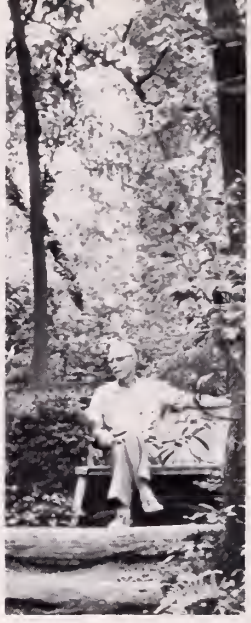

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THE
green scene

HORTICULTURE IN THE DELAWARE VALLEY

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in this issue

photo by Edmund B. Gilchrist, Jr

City Farming:

We do it ourselves.

by Blaine Bonham

After helping to set up 130 community gardens, we have found that people, not produce, determine whether gardens are successful.

Though it was late September, the strong rays of the early morning sun promised a warm fall day. Mildred Browner donned her sunhat and met her friends Esther Williams and Willie Lassiter at the garden gate to Aspen Farms at 7:00 am. Ms. Browner always makes it a point to water and cultivate before it becomes too hot to work. That morning, however, the gardeners were on a harvest mission. Ms. Williams scanned the neat rows of vegetables for the plumpest tomatoes, eggplants, peppers and okra. Ms. Browner carefully removed a few almost perfectly formed heads of cabbage and tugged on turnips, carrots and beets in search of thick and fleshy roots. And Ms. Lassiter snipped off swelling buds from the flower border that framed Aspen Farms. After gathering their harvest, they returned to Ms. Browner's kitchen to wash, scrub and groom the specimens. The three women were preparing for the annual Harvest Party that afternoon and these vegetables and flowers represented the cream of the crop from Aspen Farms; they were to be entered in competitive classes against hopefuls from other gardens.

Aspen Farms is not large by today's commercial farm standards. But then, it's not a commercial farm. It is a community garden, measuring 7,200 square feet, accommodating 40 families from the surrounding eight block area known as Mill Creek. And while that name conjures an image of a quiet rural burg, local urbanites know it as a section of West Philadelphia four blocks north of Market Street at 49th. In fact, all of the community gardens that participated in the Harvest Party are located within the city limits—sandwiched between row homes or on corners where houses, factories or gas stations once stood.

The Harvest Party's sponsor, the Pennsylvania Horticultural Society,

continued

City Farming:

continued

Residents at Christian Street & Grays Ferry Avenue convert a vacant lot to a vegetable garden.

conducts a Community Gardening Program. From the experience of establishing two children's vegetable gardens in the summer of 1973, PHS developed a comprehensive program that has sponsored 130 gardening projects in communities primarily in North, West and South Philadelphia. Working out of the Gardenmobile, the four members of the Community Activities staff assist interested community groups and organizations from late winter to fall in developing local gardening projects. The Society supports a garden by providing the initial ground preparation—tools,

photos by Edmund B. Gilchrist, Jr

photo by Blaine Bonham

fencing, seeds and plants for a two-year period. In addition, they conduct a series of training sessions for the new gardeners and produce a newsletter PhilaFarmer, which contains articles as well as notices about workshops, local horticultural events and noteworthy items about the community gardeners themselves.

After the initial support period, the gardeners "graduate," and then independently get their own materials and services for their gardens. PHS coordinates the city's most viable gardening project through its own resources, some grants and some corporate and municipal support; this year they are also working in cooperation with the Penn State Extension Services Urban Gardening project. The Community Gardening program is now considered one of the major urban farming efforts.

Community gardening, as the participants at Aspen Farms practice it, is an urban phenomenon of this decade. Cleveland, New York, Chicago, Washington and Los Angeles are among those cities creating the trend. Often, non-profit organizations, corporations or city governments are working with community gardens. Certainly, it is not an original concept. The Victory Garden movement during the Second World War was a sort of community gardening. Their raison d'etre was a patriotically inspired one, and their chief purpose was food production. But urban gardening of the 1970's is motivated by a different set of social conditions. And while growing food is undeniably one of the purposes and benefits of gardening, it is not the driving force behind the movement. At least PHS staff (and some other community gardening resource people across the country) don't think so. What happens to the community and to the individual in the process is of greater significance than the harvest.

conserving a spirit

For three summers we have regularly visited in the Gardenmobile the new garden sites offering information and advice to the urban "farmers"; for many this is their first attempt at working the soil. In return, we gained insight into the effect the project can have on the communities and the individuals themselves:

"People just come around and they look over the fence and they want to know how they can join," Ms. Browner told us. She told of neighbors gathering together and developing new friendships and of a renewed interest in the local community organization.

The Reverend Licorish, of Zoar Methodist Church on 12th & Melon Streets, said "For the senior citizens, this has been a rallying point. The first place they gather is at the garden to see how it's doing." The older people in that community have formed a club whose activities have expanded into other recreational areas.

The project has struck a very human cord of wanting to work and share with other people, breaking down some of those feelings of isolation that often characterize the life of urban dwellers. The residents view the garden project as an improvement to their neighborhood and in the spirit of cooperation they work hard to farm the vacant lot on their own block. They won't generally

continued

City Farming:

continued

photo by Edmund B. Gilchrist, Jr

The Aspen Farms gardeners select vegetables for their Harvest Party.

travel three or four blocks outside their neighborhood to garden. The 2100 block of N. 20th Street symbolizes the infectious community spirit that can emerge: a vegetable garden on one vacant lot was followed by a flower garden on another, conceived and executed entirely by the block organization, with materials procured from a local building under demolition. Window boxes and tire urns bulging with flowers adorn every house (even the vacant ones). The community is now working on plans for a vegetable garden on another lot and wants to plant street trees.

Obviously community gardening has fostered and enhanced community cooperation and pride. But we also gained insight into how much gardening means on a personal level. "I *really* enjoyed it," Shirley Simms of the 3rd & Diamond St. garden proclaimed, popping her head inside the Gardenmobile. "When it gets on my nerves in the house, I grab my little hoe." A laugh followed. "Six o'clock in the morning, six o'clock in the evening, sometimes 9:00 at night." Ms. Williams at the Greens' Acres garden on Brown Street shared that personal enthusiasm. "Oh, you should have seen when the first plants came up. I was *so* happy." At a site at 18th & Earp Streets in South Phila., Mr. Howell stopped in mid-sentence. "Listen how I'm bragging. You better bet I enjoyed this garden. Isn't it beautiful?"

Community gardening—horticultural therapy on a large scale—affects people collectively and individually. It's an important step to altering city life, so important in fact, that Federal legislation (National Gardening Act) for the creation of urban community gardening programs in major cities is pending.

In the past, unfortunately bills like the NGA have been well meaning but a little misguided. They emphasize the use of unproductive urban land, the dollar savings for families, and nutrition, all important goals. What they have failed to emphasize is "people." They have not asked: why do people want to garden; how will people work together to garden and what effect does gardening have on people? Community gardening is a grassroots effort at changing the quality of city life: it draws people together, it promotes cooperation and stimulates good feelings about achievement. And it puts an element of control back into the lives of the individuals. After all, it is that small group of people on a block who generate a community garden and it is their interests that it serves.

At least that's how we see it in Philadelphia. And that's how Ms. Browner sees it too, "When I saw all those vegetables in our garden, I thought to myself, 'We did this.' "

You certainly did, Ms. Browner.

Blaine Bonham is PHS director of Community Activities.

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150th Anniversary Celebration

CHANGING TIMES: Planning for the Present and Future

The Pennsylvania Horticultural Society is different today than it was 20, 50 or 100 years ago. Its members are different. And its activities have changed beyond recognition. Yet we cannot say that we are abreast of the times. No matter how determinedly we try to keep up with developments, we find ourselves scrambling to meet the new demands that thrust themselves upon us. Like all social and cultural institutions in this country, and, for that matter, throughout the world, we are caught up in far-reaching changes whose nature we can only dimly perceive.

That is why we have chosen to center our 150th Anniversary Celebration on a symposium to discuss the future of horticulture. We have asked eight panelists with broad and different backgrounds to give us their ideas about horticulture in the years ahead, the next 10 years and the next 150 years. All readers of the *Green Scene* are invited to attend the symposium, which will be held in the afternoon on Thursday, October 13, and the morning on Friday, October 14.

In order to give our panelists something to focus on, we have prepared the two discussion papers printed on the following pages. We hope you, and they, will find them interesting and provocative. To us, they suggest that an institution such as ours must be more concerned with people than with plants. We are not just a depository for horticultural information or a clearing house for horticultural skills. We are an organization for people who are interested, or who might become interested, in what our founding fathers, in 1828, called "one of the most rational and pleasing amusements of man."

Ernesta D. Ballard
President
Pennsylvania Horticultural Society

150th Anniversary Celebration

Discussion Paper for Thursday, October 13, 1977

WHITHER HORTICULTURE? THE NEXT 150 YEARS

In a time of fast foods, packaged vacations and free form life styles, what is to become of amenity horticulture? Will the current concern for the environment transform horticulture into conservationism, flavored with a sentimental reverence for green things? Or will our desire for instant gratification and our impatience with discipline turn us away from the painstaking practice of horticulture altogether? Or will our plentitude of leisure time and our reviving interest in crafts and skills lead to a renaissance of traditional horticulture, with special emphasis on decorative achievement? Is it conceivable that our revolt against urban pollution could lead to a generation of greenbelt cities, populated by gardeners?

Institutions concerned with ornamental plants—horticultural societies, arboretums, educational institutions, trade and professional organizations—all would like to know what course horticulture is going to take. And all of them would like to exert their influence in the choice of those courses. After all, they are supposed to be leaders and standard setters, not merely reporters and teachers. But the task is not easy.

150th Anniversary Celebration

Discussion Paper for Friday, October 14, 1977

MEANWHILE, WHAT ABOUT NOW?
OCTOBER 1977

The aspirations of yesterday's gardeners were not hard to understand. We know, or at least we think we know, what motivated the creators of the Garden of a High Official at Thebes, or the Court of the Myrtles at the Alhambra, or the Water Organ at the Villa d'Este, or Versailles, or Stowe or Longwood Gardens. We can readily see what a vegetable gardener is trying to produce; also a rose fancier, or a rock gardener, or a practitioner of topiary.

But what are we to make of the suburban American family? They live at number 213A on Winding Way in the Oak Grove section of Vista Village. They have obligated themselves for a lot of money to buy their house and they spend considerable sums every year to maintain the border of grass that surrounds it, and the base planting, the occasional trees and shrubs and the tropical trees and plants inside. They and others like them are expected to spend $3 billion on seed, fertilizer, pesticides, power tools, and other garden materials over the next 10 years.

Are these suburbanites gardeners and horticulturists? If not, do they want to become such? The abundance of gardening programs on TV and radio, the flood of gardening periodicals, newspaper columns and literature suggests that there is a widespread desire for horticultural information. But somehow, the results don't bear this out. Very few suburbanites get beyond the stage of the closely mowed lawn, the machine-sheared shrubs, the carefully edged walk and the scraggly indoor plants. Only occasionally do we see a suburban place that reflects a real interest in growing plants.

What is the explanation? Is it a lack of knowledge, a lack of gratification, a lack of patience, or a lack of interest because of so many competing attractions? The recent burgeoning of enthusiasm for house plants offers a tantalizing hint. Yet there are many indications that the greening of America was something of a fad and that gardening is by no means challenging golf or boating or TV viewing as a popular avocation.

Dead sassafrass in foreground. Photo was taken on Militia Hill in Fort Washington. Tree was on a well-drained site.

UNUSUAL WINTER TESTS BORDERLINE HARDINESS

with surprising results

by George E. Patton

Anyone who practices landscape architecture in Philadelphia's erratic climate soon learns to take the subject of plant hardiness seriously. I have always been keenly interested in the wide list of plants that are not entirely or permanently hardy in Philadelphia. As a transplanted southerner, I like designing with the rich and robust palette of "southern" plants. For many of these plants—boxwoods, English hollies, southern magnolias—Philadelphia is the approximate northern limit. These are the plants that survive perfectly well in Philadelphia most of the time if properly sited and cared for but these are also the plants that stand a good chance of being damaged or killed by unusually rough winters.

Last January, after the thermometer had dropped below zero for three days in a row (see box, p. 12), I wondered, as I am sure many other Philadelphians did, if any of my "risky" plants would survive. As spring came, I thought it would be interesting to write an article about the damage to plants caused by the unprecedented cold winter. Observing the damage to many individual plants would, I thought, give me a chance to learn some basic truths or to see some overall patterns related to hardiness. After my observations, however, I was puzzled and surprised at what the record cold winter did to certain plants and even more puzzled at what it did *not* do to others. Some "hardy" plants were damaged, and some "risky" plants were left undamaged. The observations described in this article are incomplete, spotty and far from scientific. It is often impossible to say whether a tree died from winterkill, salt de-icers, bad drainage, or what. Nevertheless, here is a list of some of the plants that succumbed; I have also appended some thoughts about the possible contributing causes:

damage to indigenous species

Sassafras *(Sassafras spp.)*—The tree in my garden suffered dieback of the end twigs. In a neighbor's garden a large lawn specimen died.

Dogwood *(Cornus florida)*—Some trees especially in windy locations, suffered severe dieback. Some lost their flower buds. I have notices that several large dogwood trees died completely. Hamilton Coles, an upper Bucks County nurseryman, reports the same thing and attributes it to the cold weather.

Willow oak *(Quercus phellos)* —Four nurserymen report severe damage and death of 6 in. to 10 in. caliper willow oaks in Bucks County nurseries. Most willow oaks in the area, however, were undamaged.

American holly *(Ilex opaca)*—Many large specimen trees all over the area and down to Washington died. Other American holly trees suffered an unusual amount of dieback and wind burn.

Red maple *(Acer rubrum)*—and **Sweet gum** *(Liquidambar styraciflua)* —Coles Nursery reports dieback of twigs on both these species in their Furlong Nursery,

reasons for the damage

The fact that the above listed trees, all native to the area, should suffer winter damage, testifies to the severity of the winter. Native trees rarely are winter damaged and when they are we need to ask *why,* particularly when other trees of the same variety did not suffer.

Sassafras is native as far north as Maine and is not by any means a tender plant. In the two cases mentioned above, the sassafras trees were in somewhat badly drained areas. There is certainly a relationship between drainage and unusually cold winters: A rule of thumb when transplanting a plant north of its native habitat is to provide *better* drainage as the plant is

moved northward. A native plant like *Rhododendron maximum* which grows only along streams in the Great Smoky Mountains, grows high on the hills in the Poconos where drainage is better. *Bald cypress* grows in wet sites down south but on well drained hillsides in Pittsburgh.

The Henry Foundation Arboretum in Gladwyne grows many southern plants considered out of the question in the Philadelphia climate; for example, plants native to northern Florida. Ms. Henry once told me the most important factor in her success with growing these plants is good drainage.

Skimmia japonica is a plant considered quite risky. I have tried several times to grow it but for me it does not survive our winters. Yet, I know of a planting of skimmia that I have noticed for years growing on a site exposed to the full blast of the northwest winter winds. The plants grow at the top of a drystone wall where they have excellent drainage. This spring, the only damage was some slight windburn of the foliage.

Getting back to my own sassafras, I recall that is was acquired quite by accident in a balled and burlapped mountain laurel, which I believe had been collected from North Carolina. The sassafras, which sprouted from that ball, would have been a southern strain possibly less hardy than our own indigenous sassafras. Poor drainage on a southern strain of sassafras? Will I ever know the real cause of its winter damage?

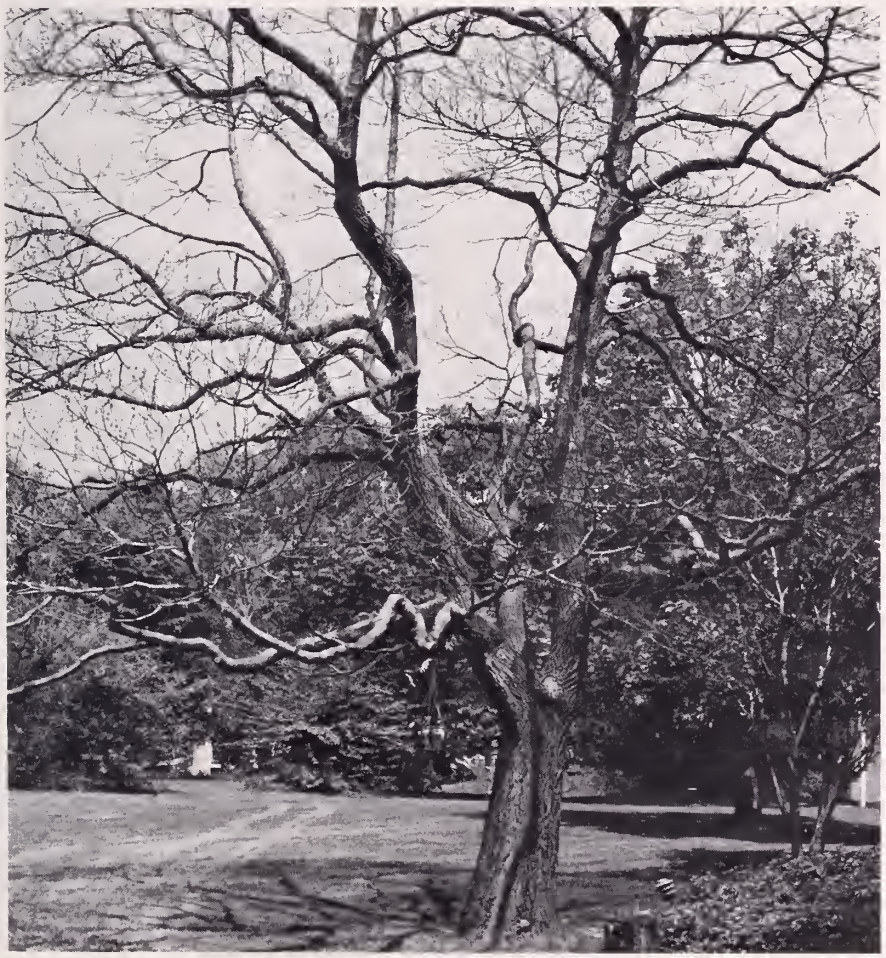
The dogwood whose flower buds were killed has had that problem to some degree once or twice before. The tree is in a windswept, well drained location. It is near other dogwoods, which were undamaged. I have no idea where the dogwood came from or why its buds should suffer winterkill when its neighbors do not.

Why would willow oaks die? These trees are indigenous to southeastern Pennsylvania. The nurseries where the dead trees grew are said to be well drained. In this case I am suspicious of the *source* of the oaks. Oaks can be propagated only from seed, and willow oak acorns are more plentiful in the south than around here. It stands to reason that willow oaks grown from acorns from the south may not be hardy in Bucks County. Indeed, plants occurring near the northern limits of the plants' natural distribution can be expected to acquire built-in (genetic) hardiness. The time may come when landscape architects may have to specify the seed source of willow oaks.

The American hollies that died could have been derived from southern clones, possibly a selection from a wild tree discovered in southern Virginia or Georgia.

Since the winter was the worst on record, we can expect that some indigenous plants would be damaged. After all, plants do retreat southward during ice ages.

This dead sassafras is on a lawn near Fort Washington and has suffered from bad drainage for years.



photos by author

damage to introduced plants

With introduced plants, many of which came from warmer or less erratic climates, we have grown to expect winter damage. Some of these exotics such as the oriental magnolias seem to have their flowers killed at least half the time in the Philadelphia area. Along with several other introduced plants, they react as if they had evolved in a climate where, once spring starts, it continues uninterrupted. This is in contrast to our native plants which must have been programmed to go dormant through our typical "false" springs breaking their dormancy only after it is safe to do so. In fact, the contrast is so distinct that one is able to look across the suburban landscape in early spring with its gaudy profusion of yellows, pinks, and raw greens and tell which are the still dormant natives and which are the exotics.

I was surprised this spring to see 8 in. to 10 in. caliper *Sophora japonica* trees killed or badly damaged. These trees had been planted about five years ago near Swarthmore. They grow on a well drained but windswept lawn in clay soil. Although the damage to appears to be winterkill, I was unable to find any other damage to sophoras so the damage could have been caused by something else such as weed killer.

People who remember the winter of 1934 say that **California privet** *(Ligustrum ovalifolium)* was practi-

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Many dogwoods were killed back or lost their flower buds.

cally wiped out in Pittsburgh. I have heard of no damage since that time but this spring about one-third of the California privet hedge plants growing on the west side of Rittenhouse Square for at least 20 years were killed. Part of the fault could have been salt on the paving. But the pattern of dead plants indicates that the northwest winds were responsible.

Japanese holly *(Ilex crenata)* was particularly badly damaged or killed to the ground, especially in wind-swept areas or where the plants were not mulched. **English hollies** *(Ilex aquifolium)* also suffered severely. Probably the major damage to nursery material in the area has been to hollies; however, no damage was seen or reported on *Ilex pernyi* or the hybrids, 'Aquiperm,' 'Dr. Kassab,' and 'Lydia Morris.'

English boxwood *(Buxus sempervirens* 'Suffruticosa'*)* despite its reputation of being risky, appears completely undamaged. Perhaps it is heavy ice or snow that damages this brittle plant rather than low temperatures.

Firethorn *(Pyracantha spp.)* was killed to the ground in exposed situations, and badly killed back almost everywhere.

English ivy *(Hedera helix)* was killed to the ground in exposed areas and looks dead on walls exposed to the winter winds.

Azalea and Rhododendron as a group were only slightly damaged including those considered of borderline hardiness such as Gumpo and other Satsukis and the Glen Dales. These varieties suffered less damage last year than in many milder winters (partly because of snow cover, no doubt). There was some tip damage to Kurume types exposed to the wind. Also, I noticed more dieback, bud-blast, and dead bushes among the **deciduous** azaleas than I ever have before. Although my *R. calendulaceum* came through beautifully, my *R. canescens* and *R. atlanticum* were killed back.

Certainly winterkill is caused by more factors than just how low the thermometer drops. These other factors include: (a) **suddenness** of the temperature drop. (b) **time** (season) of the temperature drop (the kind of autumn we had and whether or not the plants went into proper dormancy before the real cold weather hit and also whether or not plants had begun to break dormancy in spring before being hit by a late freeze) (c) the amount of insulation in the form of mulch or snow; (d) exposure to winter winds and winter sun; (e) the general health of the plant and how long it has been established; (f) whether it went into winter well-watered and (g) perhaps most important of all — drainage.

It seems to me that last winter was not without some good points. We had a good fall in terms of hardening plants off, even though some plants may have suffered from drought. We had a good spring and good snow insulation during the worst of the cold. These good factors ameliorated some of the effects of the record low temperatures so that the overall damage was far from the disaster it could have been. Tom Buchter, assistant director of the Henry Foundation, reports that we had an unusual amount of winter sun, which made greenhouse crops grow unusually well but probably was a factor in winter damage of outdoor plants. Nurserymen who have been growing plants for several decades remember the disastrous cold winter of 1934 when most of the boxwoods died out all over the Main Line. But no one I have talked to remembers seeing so much damage to native plants and such experienced nurserymen as Richard Schwoebel and Hamilton Coles say that the overall damage is the worst in their memory. The marketability of much nursery material, they say, has been ruined by dieback and it will take about a year to bring these plants back to the point where they are salable.

After completing my research for this manuscript, I had a chance to talk to Richard Henkels of Princeton Nurseries concerning winter damage at the biggest nursery in the East. Henkels reported damage to willow oaks at their Allentown, New Jersey nursery and said that their trees are grown from acorns collected from large trees on the site, which he believes are native. He also reports damage to *Carpinus betulus* and *sassafras*. He said their dogwoods were killed back and that large dogwood trees were killed "all over town." Small pines, hemlocks and yews were wind-burned in their large fields when the snow blew away and offered little protection.

The winter of 1976-77 will be one that plant growers will long remember. It will undoubtedly leave a lasting pattern on the list of plants that nurserymen grow and landscape architects specify. We may be using more boxwood and fewer hollies at least until another disastrous winter comes around.

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On January 16, 1977, the thermostat dropped to 0 degrees F., the next day, January 17, it dropped to -4 degrees F., and the following day, January 18, to -3 degrees F. For the three month period of December, January and February, the *average* temperature was only 28.0 degrees F. compared to the *normal* average for this period of 34.4 degrees F.

George E. Patton is a Philadelphia landscape architect who grew up in Western North Carolina. He studied landscape architecture at North Carolina State University and at the American Academy in Rome as winnter of the Rome Prize. He currently serves on the publication board of *Landscape Architecture Magazine.*

SURVIVORS:
Thank Heaven for Hardy Little Bulbs

by Bebe Miles

Rather than dwell on the horrors of this past winter, gardeners might well tuck into their memory book some of the things that went right.

High on my list is the behavior of the hardy little bulbs. Amidst the ruin of broad-leaved evergreens, such cheery harbingers of kinder days to come were doubly welcome. When we had an early warm snap, a few of the earliest-blooming broke records despite the severity of the winter. The others came through on schedule. Our almost constant snow cover during the coldest weather probably helped some, but nevertheless their reputations for being reliably hardy proved well deserved.

For me at least the earliest little bulbs have always been my favorites. Even in the easiest winter I need their affirmation that the solstice and spring are really in the offing. After a winter like the last, their gaiety was absolute balm to the psyche.

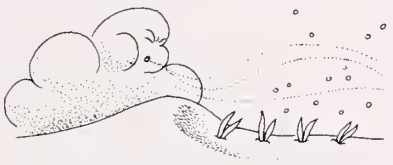
All these bulbs are easy to tuck into small niches, so every garden can accommodate a few patches. They go naturally in the foreground since most are only a few inches high. Unlike some of the later bigger bulbs, they have quick-maturing foliage that never intrudes to offend the neat gardener. They are perfect for the edge of walks or near entranceways where they can be viewed often.

Always first to flower is the larger snowdrop *(Galanthus elwesi).* It was showing shoots when the snow began to pile up last December. When the drifts finally melted, there it was, the buds already outside the protective leaf sheaf. I logged the first open flower on February 15. Depending on the winter, it has appeared in my garden as early as January 3 and as late as March 5, but it has never failed to be the first flower of the season. Somewhat larger than the ordinary snowdrop, it deserves a warm protected spot to encourage earliest blooming. Like all snowdrops it endures unscathed a late snow or cold snap. Only unseasonable heat cuts short its blossoming.

There are several other snowdrop species. The double-flowered variety seems to survive warm weather best. Planted on a south-facing bank where it received some afternoon shade from nearby evergreens, it was still in good shape on March 30 at Charles Mueller's display garden in New Hope, Pa. By then we had had some very hot weather, and others of its kind were already forming seed.

Snowdrops seem undemanding about soil preferences, doing well in both clay and sandy loam as well as the rich humus of woodsy gardens. Like most bulbs they want good drainage. Planted at the foot of a south-facing wall or boulder, they give the very earliest bloom, and that's really their greatest *raison d'etre* for any gardener. They do, however, naturalize beautifully on the sunny edges of deciduous trees.

Right on their heels are the winter aconites (eranthis). There are several species, but the easiest to



find *(E. hyemalis)* is as good an any. They feature bright buttercup-like yellow flowers backed by a ruff of green on stems a few inches high. Often I have had them show first color in February, but it was March this spring. Again they are gloriously hardy, surviving an errant late snow; only heat cuts flowering short.

To keep eranthis in the garden requires a bit of prior preparation. They flower from a tuber rather than a true bulb. Often they are quite dry when received in fall. Set them in a saucer of water for 24 hours before planting to plump up the tubers.

Select a site where there will be part shade not too long after flowering and incorporate lots of peat moss or compost if the soil does not already have good humus content. Should late spring be very dry, water them well. That encourages the foliage to stay green as long as possible. In a healthy stand it may well reach a good 8 in. high before drying off. The laciniated leaves are quite decorative.

The same treatment is recommended for the tubers of *Anemone blanda.* This little windflower is as hardy as anyone could wish, and its daisy flowers are incongruously gay on a cold, gray day. Try to buy it by color or named variety rather than in mixture. Like other small things it looks most effective when planted in colonies of a single shade. *Anemone blanda* comes in blues, pinks and white, each with a yellow center of stamens. All must have early sun to prosper. Depending on the year and the site, they open from the last week of March to mid-April.

One of my favorites broke a record for our Doylestown garden. *Hyacinthus azureus* was in full bloom by March 13, 1977. This charmer shows blue tints the moment the buds emerge, but it usually takes some time for the stalk to elongate. Not so in this year's unseasonable heat; flowering came almost overnight.

Every garden should have a patch of this bulb, for its blue is a delicate shade, truly akin to that of the sky on a fair day. It increases well but not with the pushiness of a grape-hyacinth, and its foliage is much neater. You may find it cataloged as *Muscari azureum* or as a *Hyacinthella,* incidentally. I particularly like it in front of early daffodils or as an underplanting for the hardy jasmine *(Jasminum nudiflorum).* Almost any situation where the leaves receive at least half a day of sunlight will suffice.

There are several other fine blue hardy littles. Chionodoxa especially blooms early. The generic name translates from the Greek as glory-of-the-snow, and a late storm bothers them not at all. This year they began their show on March 15. Different species exhibit varying shades of blue, often with a white eye. All do best with plenty of early sun. Seeding well, chionodoxas eventually make great sheets of color under shrubs or in the foreground of any garden.

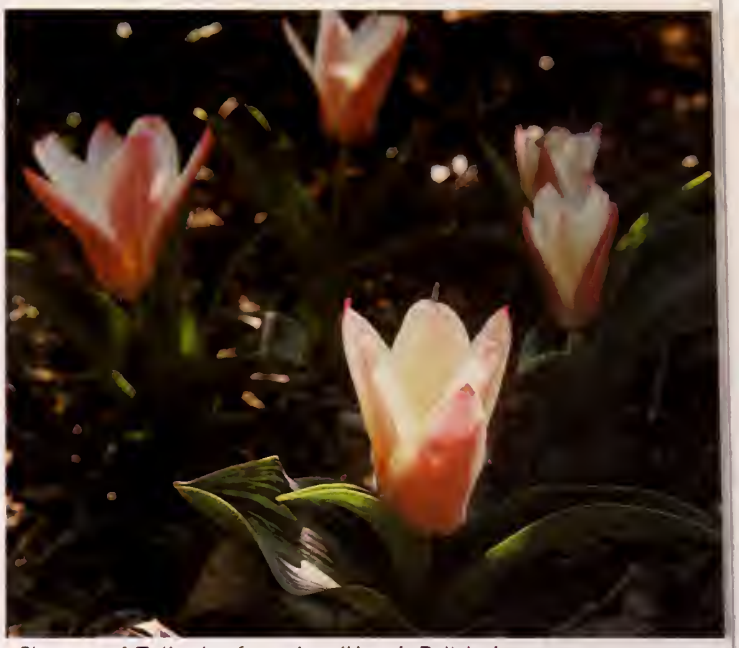
The white form of chionodoxa for

continued

SURVIVORS:
continued

photos by Bebe Miles

Crocus chrysanthus 'Cream Beauty' is author's favorite.



Close-up of *Tulipa kaufmanniana* 'Heart's Delight.'

No rock garden should be without *Iris danfordiae.*

Tulipa pulchella violacea is early and very splashy.

me has always flowered later. 'Pink Giant' contributes a welcome change of hue and is larger in all its parts, often reaching a good 8 in. at maturity and well worth a special prominent niche.

Others love the squills. *Scilla bifolia,* which has white, pink and blue forms, is often very early, but most gardeners favor *S. sibirica* with its rich blue bells. Unlike the chionodoxas, which face their bells upwards, the squills shyly keep theirs cast downward. Offsets and seeds in a few seasons will provide a rich cascade of bloom. *S. sibirica* does quite well in half shady spots where flowering will be somewhat later, thus extending the season. A healthy clump is often a good 8 in. high, but again maturing

Chionodoxa is a fine companion for *Narcissus* 'Peeping Tom.'

Iris reticulata accompanies *Narcissus* 'February Gold.'

Crocus ancyrensis splashes golden sunshine in earliest spring.

Ipheion uniflora produced this display after last winter's cold.

Waterlily tulip 'Magnificent' lives up to its name.

Daisies of *Anemone blanda* strike a gay note in the early garden.

foliage is unobtrusive. One of my prettiest plantings featured a patch of the white form completely surrounded by the blue. This was far more effective than if I had just mixed the two colors willy-nilly.

Puschkinia libanotica is known to far too few gardeners. I suspect the name puts them off. Dub it Lebanon-squill if you must, but do get acquainted. The flowers are milky white with a blue stripe in the center of each segment, and there is a definite perfume. I noted the first flowers March 20 this warm spring, but usually I expect it the first week of April. For me it prospers in both sun and half shade.

For something different try the bulbous iris. *I. reticulata* is the most

continued

reliable. In a well-drained spot with adequate early spring sun, each bulb quickly increases to a thick clump. At blossom time (March 18 this year) the foliage is unobtrusive. Even at maturity when the odd triangular leaves are at least 15 in. high, they are not bothersome. A bitter cold night wilted the first flowers this year, but more were produced.

There are numerous named selections of *I. reticulata* in various purple shades, but I especially adore 'Cantab,' a true blue. Planted near a warm south wall, they have bloomed as early as March 7 in Doylestown. The yellow *I. danfordiae* is seldom permanent, but it is worth buying a dozen fresh bulbs each fall just to have its sunshiny display.

Every veteran gardener has a favorite species crocus. These arrive weeks before the larger hybrids. Plant them in the garden rather than sentencing them to compete with grass. Their ability to increase into lush patches under these kinder conditions is just one of their assets. Most of us cherish them for their earliness. Some old records from my files: yellow crocus *C. susianus,* March 4; *C. biflorus* White Lady, March 5; violet *C. imperati,* Feb. 8; *C. chrysantus* Zwanenburg Bronze, Feb. 19. In a not particularly warm spot *C. ancyrensis* opened its golden chalices Mar. 8 this year, but it has often been earlier in more protected spots.

I confess I am most partial to *C. chrysanthus* 'Cream Beauty,' which has several times opened here March 1 but was a bit later this year. Like the other chrysanthus crocus it produces literally bunches of flowers. Other named chrysanthus forms are in shades of yellow or blue. All are loves.

Tulips do not make headlines as the earliest bulbs, but there are several that definitely extend the tulip season by many weeks. *T. pulchella violacea* may not prove permanent, but its short-stemmed vibrant cups of magenta are such a tonic in early spring you will just keep planting it in different locations in the hopes you can eventually satisfy its need for absolute summer baking. Its earliest bloom has come Mar. 17 for me.

T. turkestanica turned in a near record this year by opening its first blossom Mar. 29. This is a true bunch-flowering tulip producing easily as many as a dozen small star flowers on a stem that elongates to 8 in. It too wants full sun and perfect drainage.

You can expect hearteningly early bloom also from the waterlily tulips. These are forms or hybrids of *T. kaufmanniana.* There are many named ones in yellow and red combinations, but for me those in cream and reddish shades have proved the earliest. Perhaps their gene combination is closer to the species. T.k. 'The First' bloomed Mar. 26 this year in the open garden, and T. k. 'Magnificent' logged a record Mar. 24 in a warmer spot. I noticed waterlily tulips in bloom nearly two weeks earlier than that in more protected gardens in Doylestown itself.

Several species daffodils are by far the earliest arrivals of their family. *Narcissus asturiensis* has opened Mar. 17 and *N. cyclamineus* Mar. 22, for example. But these tiny wildlings are not always easy to tame. Far better results can be expected year after year from the cyclamineus hybrids. My favorites are 'February Gold' and 'Peeping Tom.' The latter set a Mar. 16 record this year. These hybrids are substantial flowers on good 12 in. stems and a definite asset to the early garden scheme.

I could go on into April with other fine little hardy bulbs for several more pages. *Tulipa tarda (dasystemon)* opened a great display April 17, *Muscari botryoides* 'Album' April 15 and the double *Muscari armeniacum* 'Blue Spike' even earlier. None seemed the worse for the winter they had survived.

Finally, let me just mention *Ipheion uniflorum.* This innocent has had its name changed several times, and you may find it cataloged as *Tritelia uniflora.* Perhaps because it is native to Argentina, it is not considered as hardy as other bulbs. Moreover it produces foliage in the fall so is more subject to weather vagaries. I logged it in April 17 this year, and what a magnificent display it made. Now five years old, my planting had so many flowers one could hardly see the leaves.

FIRST BLOOM RECORDS FOR HARDY LITTLE BULBS IN AUTHOR'S GARDEN

Depending on site exposure and the individual season there is considerable variation in dates of first bloom for any one bulb, but the sequence of flowering is fairly consistent. Several bulbs set records for early appearance this spring. (Bulbs without 1977 dates are not currently growing in author's garden.)

1977	EARLIEST IN OTHER YEARS	
Feb. 15	Jan. 3	*Galanthus elwesi*
Mar. 8	Feb. 13	*Crocus ancyrensis*
	Feb. 8	*Crocus imperati*
	Feb. 19	*C. chrysanthus* 'Zwanenburg Bronze'
*Mar. 13		*Hyacinthus azureus*
Mar. 15	Mar. 1	*Crocus chrysanthus*
Mar. 15	Feb. 16	*Eranthis hyemalis*
Mar. 16	Mar. 5	*Iris reticulata* 'Cantab'
Mar. 15	Mar. 11	*Chionodoxa spp.*
Mar. 20	Mar. 4	*C. susianus*
	Mar. 5	*C. biflorus* 'White Lady'
	Mar. 17	*Tulipa pulchella violacea*
	Feb. 20	*Scilla bifolia*
*Mar. 16		*Scilla sibirica*
*Mar. 16		*Narcissus* 'Peeping Tom'
Mar. 17		*Narcissus asturiensis*
	Mar. 7	*Iris danfordiae*
Mar. 18	Mar. 8	*Iris reticulata*
Mar. 20	Mar. 18	*Puschkinia libanotica*
Mar. 22		*Narcissus cyclamineus*
*Mar. 24		*Tulipa kaufmanniana* 'Magnificent'
Mar. 26	Mar. 25	*T. k.* 'The First'
Mar. 29	Mar. 28	*T. turkestanica*
Apr. 2	Mar. 10	*Anemone blanda*
Apr. 14	Apr. 10	*Muscari armeniacum* 'Blue Spike'
Apr. 15	Apr. 5	*M. botryoides album*
Apr. 17	Apr. 15	*Tulipa tarda (daystemon)*
Apr. 17	Apr. 11	*Ipheion uniflorum*

* Set a record

Bebe Miles's most recent book *Bulbs for the Home Gardener* (Grosset and Dunlap, 1976) was an alternate selection of the Book-of-the-Month Club and was chosen by American Heritage Publishing Co. for its spring 1977 list and by Better Homes and Gardens Crafts Club Books.

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A Private Garden For A Public Horticulturist

photos by Ellis Malashuk

Dr. Henry Skinner

by Amalie Adler Ascher

To Dr. Henry T. Skinner, retirement from his position as director of the National Arboretum in Washington meant time to spend in his garden, a garden shaped from dreams and memories of his youth in Kent, England. Thus an unlikely spot in Bowie, Maryland metamorphosed into a horticultural showplace where plants of every description form tiny landscapes. From formal flower border to vegetable patch, fruit orchard, lawn, topiary, and breeding nursery, they sample the range of gardening, all carefully bound together in a neat little package.

Yet it is a garden designed for easy upkeep to suit one man's lifestyle. Here Henry Skinner can do as he pleases—putter among old favorites, hybridize late-blooming azaleas, or simply relax with his wife, Ann, on the patio he built to enjoy the view, watch the birds, or entertain friends and visitors.

Passing the front of the split-level house at the top of a hill in a thickly populated development, one would never suspect what lies behind. Nor on actually seeing the garden can you imagine planning it from nothing more than a photograph. Yet that is exactly how Skinner describes the development of his project. Fourteen years ago he bought the property sight unseen, fully aware of its obstacles but confident he could overcome them.

Once you know Henry Skinner's background, it is not hard to understand his faith in himself. Trained at the Royal Horticultural Society at Wisley, England, he is currently vice president of RHS. He has worked at the Arnold Arboretum and Cornell Arboretum and was also curator of the Morris Arboretum. Small wonder that his garden today, though only three-quarters of an acre and of humble origin, looks as if it belongs on some country estate in England.

If you are interested in the history of the place, Skinner will tell you that

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it was once part of the old Belair Estate built by Samuel Ogle, an early governor of Maryland. Later it became the summer residence of the Woodward family of horse-racing fame. His own lot when first landscaped by the builder was as undistinguished as the others in the development. Each was a carbon copy of the next with a few clumps of ordinary bushes stuck here and there. But Skinner changed all that.

His first task was to eliminate the hill. How? By simply cutting off the top of the slope and moving it to the bottom.

Two hundred wheelbarrow loads of dirt later, the ground had been raised to a level surface. For plants, he hauled in seven truck loads from his former home in Washington and set them out on the basis of rough sketches and a few "vague ideas floating through my head." By merely shifting and fooling, he says, he was able to transform his surroundings into what can now be described as a spectacle.

The solution to a low maintenance garden, he explains, lies in the choice of plants. So Skinner picked only those that would need minimum replacement, or be least likely to contract disease or insect problems. More than that, they should be easily obtained and grown, colorful and decorative, lasting when cut for indoor display. Zinnias were out because they get mildew. But he planted roses despite their susceptibility to blackspot, confining varieties to the more resistant shrub types like Father Hugo and Rose Hugonis. Since most lilies attract mice and tend to peter out eventually, he settled on Yellow Enchantment and Destiny that are tougher and tend to cure themselves of viral infection. Nevertheless, he gives them special protection by encasing them in baskets of hardware cloth.

Other flowers he is partial to include petunias, impatiens, money plant, and phlox, sedum and gaillardia that self-seed and reproduce readily, requiring only that he shift them around. Peonies are another bonanza providing attractive foliage in addition to bloom. As for dahlias, they're a pet for easy culture though Skinner admits borers do sometimes invade stems. But he is ready for that too, dousing the soil with Scope, a systemic insecticide, before active growth in early June.

The walk leading to the house is alive with year-round color, blooming from March through summer. Beds facing front resemble rock gardens without rocks, plants neatly compact, low-growing. In winter, candytuft creates grey-green mounds, white in spring. Aubrieta or rock-cress lays mats of purple; variegated liriope sends up blue spikes to cut. Anthemis, a white daisy-like herb perfumes the air complementing companion spring flowers of dense-spreading golden alyssum or Basket-of-Gold, an evergreen. Pinks are everywhere. To protect them all, Skinner has installed pig-netting to prevent neighbors' cats from scratching at roots.

His first task was to eliminate the hill. How? By simply cutting off the top of the slope and moving it to the bottom.

Along the top of the eaves of the house, showy wisteria blooms in mid-April. The secret of bringing it to flower, he says, is to prune it in summer, cutting off all young shoots to within 2 in. of the base where flower buds form. (It's easy to tell the difference between leaf and flower buds if you can recognize flower buds as larger and thicker.) A second pruning should follow between mid-June and mid-July. Tree wisteria needs more drastic pruning periodically.

Among the boxwoods are dwarf varieties of Japanese, Morris-midget and Morris-dwarf, both originated by Skinner in 1948 during his tenure at the Morris Arboretum. These he keeps clipped into compact shapes, some rounded, others in rows to form a rectangle, but none more than inches tall. An arch of Japanese holly is set off by daffodils in spring. Other varieties of holly he favors include hybrids of *Ilex pernyi* called John T. Morris and Lydia Morris, the female bearing an abundance of red berries in late fall. The two are superior to ordinary pernyi for their pyramidal growth habit, which needs pruning only every other year. Skinner also points out an *Ilex cornuta rotunda,* a dwarf Chinese holly he prefers for its heat tolerance. You need never water it—well hardly ever. And it's practical for planting along city walks, the prickly leaves a deterrant to trespassers.

Along the east wall of the house, camellias, andromedas and June-flowering Satsuke azaleas in pink, white or combinations frame the window behind. One camellia has become a permanent home for cardinals. A bench below nestles in an edging of littleleaf Japanese boxwood interspersed with hardy Evans begonias and *Fuchsia riccartoni* that seed themselves and withstand our climate. In a center bed, tender pansies and wax begonias mulched with pine needles provide changing summer color. They are accented by a tall fuchsia Skinner trained as a standard. It's easy, he says: Remove all side shoots and allow only a single central stem to develop. When the plant is about three years old and 4 ft. tall, pinch out the top to encourage spreading. He puts the tree outside in summer, winters it in the greenhouse where flowers develop in anticipation of spring.

For a clean tree that doesn't shed much and requires little maintenance, Skinner likes the American yellow-wood for year-round display. It has white wisteria-type flowers in June, orange to yellow foliage in autumn and attractive smooth gray bark. Since it bleeds profusely in early spring, it must be pruned in fall. A member of the pea family and native to the Western Smokies of North Carolina and Tennessee, this ornamental is amazingly free of pest and disease. Yews are another standby, always green and trim in winter; cut back in late June when growth first begins, then again in fall.

One of the most surprising plants to see in the collection is a 14 ft. dogwood. Placed next to a purple plum tree for contrast, it is unique because unlike its usual relatives whose branches spread, this one has been deliberately shaped into a dense column. Skinner produced the effect by trimming it only in summer at time

Formal garden

of greatest growth.

Sitting on the patio away from the afternoon sun to escape the heat, you overlook the lawn surrounded by phlox, golden marguerite, shasta daisies, iris, lavender, and bee-balm in red, pink and purple, all easily grown perennials for cutting. Although Henry Skinner hates cutting grass, he puts up with this chore to keep the grass in shape for playing his favorite English game—lawn bowling, a pasttime he says Sir Francis Drake originated in the days of the Spanish Armada. Directly in the line of vision stands a stately blue juniper, the focal point, pruned in topiary fashion to resemble a squirrel. He keeps it from browning by pruning it in mid-June instead of late in the season.

In planning his garden, Skinner has gone out of his way to attract the birds. There are butterfly bushes in lavender and yellow for humming birds, mullein for chickadees, thistle for bluebirds and gold and purple finches, as well as many other berried and fragrant plants. He has even devised bird houses designed for specific needs. No wonder his home is a favorite meeting place for members of the Ornithological Society and horticultural groups.

When he travels, Skinner watches for wild plants to increase the variety of his collection. Sometimes he finds them along the roadside, digging a sample only if the plant grows like a weed and will survive transplanting, because Skinner is a conservationist. The garden contains many examples from his trips, small asters from the Medicine Bow Mountains in South Wyoming; a large deodar from a roadside stand in Alabama; from England, seeds of a plumed poppy *(Macleaya cordata),* a decorative and unusual pest-free perennial; a large flowered Eastern dogwood from Valley Forge; and *Iris reticulata* from the Magazine Mountains of Arkansas.

Once in a while, Skinner discovers a wild plant with traits he seeks to breed for new varieties. For example, a wild

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Closeup of flower bed

Dr. Henry Skinner, "Let the garden take care of itself."

sunflower he found in an old cow pasture near the mouth of Seneca Cliffs had the broad petals he had been looking for; two western azaleas *(Rhododendron occidentale)* not normally grown in our area but that he happened to spot here, he is now crossing to obtain larger flowers and a deeper scent.

The woodland garden consists almost entirely of plants brought with him from Washington including a whole section of hybrids, all from his own crosses. Around the perimeter are trees remaining from the original woods. But once lost in the forest-like enclosure, you can scarcely believe it measures a mere quarter of an acre. The illusion of size is due to Skinner's tricky layout of a series of paths that wind and twist as if they go on forever. Surprises lurk beyond every turn. As a final touch, he has screened with dense shrubbery any openings that would reveal neighboring houses and give his secret away.

It's a cool and quiet spot among an infinite variety of plants, some freakishly growing in an alien environment. A palmetto that normally survives no further north than Fayettesville, North Carolina has persisted for years without sun, Skinner believes, because it is protected on an east slope from western winds; some tall narrow columnar cypresses of Rome that shouldn't be hardy here continue to thrive beside rare Carolina hemlock.

Others in the group include native azaleas from the Smokies, camellias, lots of bamboo, leucothoe, arborvitae, swamp magnolia, dwarf spruce, dawn redwood, and ground covers, blue phlox, ferns, liriope, and Jack-in-the-pulpit. There is Danae or Alexandrian-laurel, a small shrub of the lily family with yellowish flowers and red berries, long-lasting when cut whether in water or not. There is a fruit corner too, with apricot, hardy fig and apple trees; a small nursery with plants he is developing to hold for later changes in the garden, or for propagating hybrids. (He received the Award of Merit from the Royal Horticultural Society for Cornell Pink, a variety of rhododendron he raised and named.)

More than that, these man-made woods are the source of rich organic material. Little attention is required other than occasional raking, more a matter of gathering fallen leaves so they can be thrown back on other plants. After all, Skinner says, the more leaves plants collect, the better. He also manufactures his own mulch in winter from branches and sticks he grinds in a small wood chipper powered by a hammer-mill gasoline motor. He likes the rotary type.

When he makes compost, it is by the simplest method of sprinkling a generous amount of 10-6-4 on every foot-high layer, but he adds it only when forking the pile over, not when building it at first. Each layer is soaked once and not again unless dry. The bin, 6x5 ft., supplies enough compost for the entire garden.

The vegetable patch demonstrates another side of Skinner's ingenuity. He turned a small 50x20 ft. slope into level ground for the greatest yield of fruits and vegetables by planting rows on the diagonal with retaining banks of phlox and lily turf in between. As a result, he gained maximum space, prevented erosion and helped dam the flow of water. His mini-farm is crammed with lettuce, tomatoes, strawberries, beans, beets, carrots, onions, potatoes, swiss chard, mint, parsley and sage. Even the border is edged with chives doubly providing attractive purple flowers as well as flavor. Close by are bushes of blueberries, blackberries, and boysenberries all safely protected from nibbling birds with special green plastic netting. Unlike any to be found in this country, as far as he knows, Skinner says he brought it back on a trip from England. He values it for its leafy color, light weight, open weave, toughness and durability that permits the flow of air and sun and doesn't crush plants.

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Amalie Adler Ascher is the author of *The Complete Flower Arranger*, Simon & Schuster, 1974, and teacher on her own PBS series, "The Flower Show," produced by The Maryland Center for Public Broadcasting and aired nationwide. She has lectured from Florida to California, in the Bahamas and in Mexico, and contributes regularly to *The Baltimore Sunday Sun* on gardening.

The Elaeagnus Cometh (From Where?)

by Edwin A. Peeples

The Elaeagnaceae are a family of shrubs to which horticulturists seem to have given close attention only recently. Even now, all of the returns may not be in. We may still be missing a precinct or two. For the facts we have are contradictory on characteristics, names and even numbers of varieties.

The authorities I have consulted are the Eighth Edition of Gray's *Manual of Botany,* 1950; *America's Garden Book,* revised, 1958, the Bush-Browns; *Shrubs and Vines for American Gardens,* revised, 1971, Donald Wyman; and an article in the November, 1976, *Horticulture* by Philip L. Carpenter. It might be argued that some of these references are fairly old, but, considering that all of the better known Elaeagnaceae were introduced to this continent before 1862 and that even the most prominent cross, *Elaeagnus x ebbingi,* was developed in Holland before 1939, the confusion that exists looks more like inattention than lack of opportunity or specimens.

Except for *E. commutata,* which is native to the northern United States and Canada and which, oddly enough, is described only by Gray, the rest of the Elaeagnaceae have come from Eurasia or Asia.

The scholarly confusion would not have struck me particularly except that my wife and I got introduced to the Elaeagnaceae have come from have been watching them with considerable interest and had been puzzling over what one of our varieties is. The shrub came to us, not from Asia, but from Atlanta, Georgia.

The abundance was so great that mother began including a wad of seedlings in every package she sent us. She didn't pack very well, so most of them died in transit.

Eventually we found that the one we got introduced to was *E. pungens* (supposedly not hardy above Zone VII).

E. pungens is highly esteemed in the south, where it grows with rampaging vigor to bushes 12 ft. high and equally large in diameter. There, the shrub must be clipped as heavily as one would clip privet. Else, it engulfs everything. *E. pungens,* so far, is the one most favored for crossing. *E. x ebbingi* the Holland cross, is *E. macrophylla x E. pungens.* Also, Wyman lists these varieties of *E. pungens* developed by southern growers for decorative purposes: 'Aureus' (leaf margin with rich yellow), 'Fruitland' (rounded leaves with wavy margins, leaves larger than in other varieties), 'Maculatus' (large yellow blotch in center of leaf), 'Tricolor' (leaf variegated with yellow and pinkish white) and 'Variegatus' (leaf margin of yellowish white).

My mother, who lived in Atlanta, admired *E. pungens* extravagantly, owing to the dense, fragrant blossoms it had in autumn and the ellipsoidal berries, pinkish-red, splotched with silver, which matured in May. In the south, germination of these seeds must be very high. The abundance was so great that mother began including a wad of seedlings in every package she sent us. She didn't pack very well, so most of them died in transit. But, where there is plethora on such a scale, inevitably something survives. My wife potted the seedlings that did, raised them to a fair size and resolutely popped them into various locations around our house, despite having read they weren't hardy in our zone.

We had been soaking up a good deal of doctrine on mini-climates and had identified eight pockets of mini-climate on our premises.

E. pungens—we had the pure strain, not one of the varieties—proved marginally hardy. Only four of our plants survived, but these are now eight to ten feet tall and are in rude good health, if abundant blooms and fruit are a measure. They also produce a few seedlings.

The shrubs that survived have either a northwest or southeast exposure in spots completely sheltered from winter wind. Each is against a wall or a lattice barrier. Normally evergreen—the only non-crossed elaeagnus that is—*E. pungens* can, we discovered, become deciduous in a severely hostile exposure and still survive. One of ours, no more than six feet from one that continued evergreen, exposed to winter wind, went deciduous and lasted eight years. It bloomed sparsely and seldom had berries. Finally, the rigors of dying back and springing up proved too much, and the shrub died.

But the glories of the ones that lived are impressive. The new leaves in spring—dark olive green on top, silver on the bottom—are in startling contrast to the pink-red, silver-splotched maturing fruit. By autumn, the leaves are lighter green, flecked with silver gray. The undersides take on a powdering of rusty gold. In October, the shrubs bloom: thousands of small white blossoms, no more than 3/8 inches long, hanging like limp opera gloves. The air is dense with an exotic fragrance, which seems to me like a powerful carnation talcum; to Wyman, like gardenias, and to others, like lilies. When other flowers are dead and the prevailing aroma is of acorns and fermenting leaves and grasses, the perfume of *E. pungens* echoes spring.

We came to our second elaeagnus because we had a corner that needed a small tree. The soil in the corner was atrocious; the exposure, dreadful. Two dogwoods and another tree had died there. My wife read that *E. angustifolia (oleaster)* was just the tree for such a place. *E. angustifolia* was

continued

Elaeagnus

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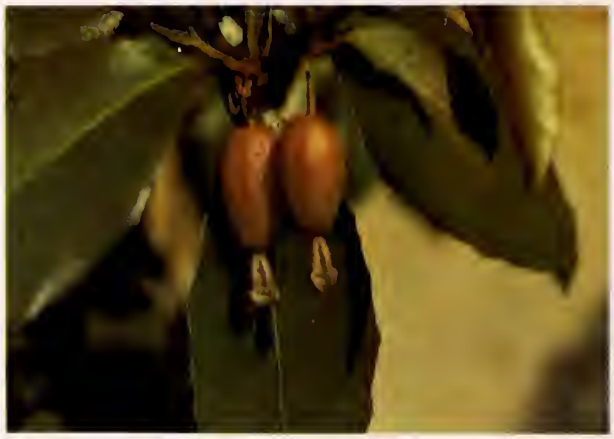

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photos by John M. Fogg, Jr

1. *Elaeagnus pungens*
   April
2. *Elaeagnus pungens*
   August
3. *Elaeagnus pungens*
   October

the Russian olive. Its habitat was southern Europe, western and central Asia. It was brought here in colonial times. It was hardy to Zone II, liked sandy, clayey soil and could survive on very little water.

Our specimen has lived up to every particular of its billing. It flourishes, is disease free, and nothing bothers it, not even severe maiming. When ours had achieved a height of 20 feet, a woodsman, felling a dead tree, accidentally dropped it on our Russian olive, breaking it back to 10 feet and shattering major side branches. We pruned and painted the wounds. That was three years ago. Today, the tree is back to 20 ft. and, apart from not having entirely cured a lopsided stance, shows no ill-effects.

E. angustifolia is quite different from *E. pungens.* The foliage is long, slender leaves of a soft, gray-green, which looks silver in bright sunlight. Sandwiched between the dense, dark foliage of dogwoods, as ours is, the Russian olive appears to be a cloud on the verge of taking off. The flowers, which come in June, are golden yellow and have a fuzzy look, in contrast to the bell-shaped blooms of *E. pungens,* Their fragrance is much the same but less dense, coming and going, as if someone were waving a perfumed handkerchief.

Our third elaeagnus is a mystery. It crept upon us in stages. It is the one that led me into the scholarly confusion.

On a Sunday in October, while I was following the Sky Castle Bassets on the farm of Elizabeth Streeter, the Master of Basset Hounds, I came upon three gray-green bushes that looked terribly familiar. They grew in a clearing, where I had once found volunteers of American holly and which are now growing dense with saplings of silver beech and tulip poplar. The shape and color of the leaves, the upward sweep of branches, the shape of the whole shrub cried out elaeagnus.

But which elaeagnus? If they were *E. pungens,* they should be in bloom. If they were *E. angustifolia,* the leaves should be longer and narrower. And where did they come from to be volunteering in this incipient forest?

The next time I basseted the area, winter had come, and all leaves had fallen. I couldn't even find the bushes. I decided I had been imagining things. Simply because I had found volunteer holly in the same patch, I had persuaded myself the place was a forcing bed for random exotica.

Last spring, though, as if to prove a point, the miracle struck closer home. Our farm has a large pasture that is chiefly swamp, rising here and there to knolls of higher ground. One of these knolls is near our barnyard. One day, when I was walking there, I saw, rising to nine feet, two bushy trees that were very like the three I had seen basseting and were unquestionably a species of elaeagnus. The leaves were silver-gray against yellowish-brown branches. The shape was more shrub-like than *E. angustifolia;* more tree-like than *E.*

4. *Elaeagnus multiflora*
April

5. *Elaeagnus angustifolius*
May

6. *Elaeagnus multiflora*
June

7. *Elaeagnus angustifolia*
May

pungens.

In May, they bloomed. One day there was no indication of buds; the next, each tree was an explosion of flowers. The blossoms were so dense, they overwhelmed the leaves and obscured the branches. The fragrance was the same as *E. pungens* but even stronger. The flowers were yellowish white with silvery and brown flecks. They couldn't be *E. angustifolia* or *E. pungens.* What were they?

This was the point at which I consulted experts. Gray lists only four Elaeagnaceae: *angustifolia, commutata, umbellata* and *multiflora,* and his description of these is skimpy. Gray does not list *pungens,* although the variety has been here since 1830. The Bush-Browns list only four: *angustifolia, argentea, longipes* and *pungens.* According to the Bush-Browns, *longipes* is the cherry elaeagnus and has yellow flowers in June. Wyman lists four basic varieties: *angustifolia, multiflora, pungens* and *umbelleta* plus the *E. x ebbingi* cross and the five varieties of *pungens* that I've described. According to Wyman, *E. multiflora* is the cherry elaeagnus, blooms in mid-May and has yellowish-white flowers with silvery and brown scales.

It looked like *longipes* and *multiflora* were the same species. If so, that cleared up one bit of confusion. The Bush-Browns called *argentea* silverberry, to Wynan, the *umbellata* is silverberry. Gray is certain *commutata* Bois d'Argent, Chalef, is silverberry. Are all three identical?

Wyman calls the *umbellata* the autumn olive. Philip Carpenter agrees with this name. Carpenter's particular focus is on the fact that the Elaeagnaceae, notably *angustifolia* and *umbellara* share with several other shrubs the ability to form nitrogen nodules at their roots, as legumes do. These are fresh tidings. None of my other three sources remark any nitrogen fixing abilities for Elaeagnaceae. More important to my problem, however, is Carpenter's confirming Wyman's description of *umbellata* as a low, spreading shrub.

Our volunteers were tall, willowy bushes, not low spreading shrubs, so they could not be *E. umbellata (argentea).* They could be *E. commutata,* except that Gray says *commutata* is unarmed, and our volunteers have thorns. Hence, we must have the cherry elaeagnus, the berries of which are described as tart and suitable for making jelly. We mean to try them.

Where did they come from? We hear that the late Albert Barnes planted several varieties of elaeagnus on his farm, Kerfeal, which adjoins the Streeter farm and is about four miles, as a bird flies, from ours. Since then, the cherry elaeagnus seems to have migrated slowly, first to the Streeters, then, evidently unnoticed, to many intermediate farms and finally to ours.

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Edwin A. Peeples is a frequent contributor to *Green Scene.*

Skylands Botanical Gardens

by Marie Kuhnen

Marie Kuhnen is Professor of Biology at Montclair State College, Upper Montclair, N.J. 07043. She has taught general botany and field courses for 31 years at Montclair.

photo courtesy of author

Front Drive, Manor House, Skylands, Ringwood State Park, Ringwood, N.J. 07456

High on an exposed slope of the Ramapo Mountains in northwestern New Jersey sets a mansion surrounded by an array of formal and informal gardens and wilderness. The view toward the Wanaque Reservoir and more distant Ramapos is inspiring at any time of the year. The area, known as Skylands, is part of Ringwood State Park. The members and staff of Skylands hope it will become a State Arboretum of significance, an objective within early realization because of the many outstanding plants already present and the dedication of its supporters.

Skylands is the realization of New York banker Clarence MacKenzie Lewis's desire to create a magnificent home and gardens. A stroll through the 1200-acre estate will fully attest to his success.

In the early 1920's Lewis purchased the land from F. L. Stetson, a corporate lawyer, who had developed the old farms originally there into an estate with a manor house and a number of handsome buildings, including barns, a carriage and pump house, lodge and others. Lewis, however, replaced the manor house with an elegant mansion of unusual architectural design. The building is English Tudor in the back and English Gothic in front. The stone was quarried on the property and cut so skillfully by imported masons it has the look of mellowed medieval age. Hand-carved woods trim both the exterior and interior. The castles and mansions of Europe were scoured for stained glass windows (some date to 1550), statuary and furnishings. The fireplace in the Great Hall, for example, is a replica of one from Scotland. Apparently the toss of a coin sent the original to the Hearst Museum in San Simeon, California. Tours of the house are conducted during the summer.

A staff of 60 gardeners maintained the place.

As fascinating as the mansion is the grounds are even more so, particularly for the horticulturist. Lewis's hobby was plants. He obtained catalogs from all over the world and used them as the source of his plantings. For every plant obtained, a detailed record of every aspect from acquisition to its final disposition was kept. These records are still available.

His gardens were laid out in the English manner. Formal beddings led to semi-formal, which led to wild flower to forest in a tasteful, gradual sequence. This organization contrasts with the more usual continental type of formal garden laid within a sharply distinct natural type. A staff of 60 gardeners maintained the place. One was Stuart Longmuir who worked for him over 40 years and who, in his retirement, even yet comes weekly to label plants. Hundreds of truckloads of soil were carted in to create the expansive lawns now surrounding the house. Adjacent to it is the rock garden with a fine collection of heaths and dwarf conifers. The succeeding Terrace Garden is lined with tall, trimmed *Magnolia virginiana,* the wild sweet bay magnolia, so unusually large that one is surprised to learn they can grow to this size and form. This leads to the Long Pond garden with fine rhododendron, azalea and mountain laurel plantings. A generous donation of plants from a private citizen and the efforts of members of the Tappan Zee Chapter of the American Rhododendron Society have made this collection of heaths outstanding. In the spring these plants provide a striking mass of color.

In another area is a half-mile lane of crab apples, *Malus astrosanguinea,*

which when in full bloom, is thrilling to see. Recently a Pinetum was started with plans to establish a fully representative collection of conifers. There is also an outstanding collection of lilacs with representatives of the three basic types providing a succession of bloom. The layout of this collection is of a particularly beautiful design.

Lewis enjoyed sitting in his library in the winter. From there he saw his Winter Garden, a collection of conifers placed for form and color as well as variety. Now in their maturity these trees are even more impressive for their size and beauty. Among them is one of the largest Jeffrey pines *(Pinus jeffreyi)* in the Northeast. Atlas cedars *(Cedrus atlantica)* have survived well the often severe exposure. Included in this planting also is a most magnificent weeping beech. An extension of this garden has provided room for upright English oaks, Kousa dogwoods and other exotics. Nearby are huge pin, red and scarlet oaks. This is a haven for any admirer of trees.

Elsewhere on the grounds are three species of Stewartia *(monadelpha, koreana, sinensis)*, yellowwood, Kentucky coffee tree, silverbell, double-flowered dogwood *(Cornus florida)*, a yellow-berried dogwood and many other rarities. A winter hardy cactus garden, both plants and labor being provided by members of the N. J. Cactus and Succulent Society, is being developed with the basic overall landscaping design in mind.

Since its origin with Lewis there has been a wildflower garden which, because of the care provided by dedicated volunteers, has an excellent representation of native and non-native herbaceous plants. One of the latter includes *Gunnera spp.*, being carefully protected with the hope it will winter over successfully. Included, too, is a fine stand of the lovely fringed gentian,which has been selected as the official flower of Skylands. The fern garden is being increased considerably, again by devoted volunteers. Already an extensive list of species is represented in it. Lewis had brought in loads of N. J. Pine Barrens soil to support a collection of the plants common to that unique ecological zone. This collection, including a bog garden, is being much expanded.

As mentioned, one garden type leads to another. Thus one can find, for example, a couple of dozen varieties of English ivy cascading over a wall in a semi-formal setting and then find additional ones climbing trees on the edge of the native forest. These forests are typical of the mixed oak types of the Ramapos with great mature oaks with beech, maple, birch, dogwood and the native shrubs such as maple-leaved viburnum, witch hazel (there are other species of witch hazel elsewhere on the grounds) and spice bush associated with them. High dry ridges, exposed slopes, moist lowlands, rocky streams and ponds are represented in this forestland.

Fringed gentian

Something is in bloom somewhere on the grounds throughout the year, *Jasminum nudiflorum* blooms off and on in January-February. Witch hazel *(Hamamelis vernalis, mollis, japonica)* can flower in February-March to early spring. *H. vernalis* is represented by two forms, the native yellow and a red one. During the proper season masses of herbaceous plants are on display, many of them having been started in the large greenhouses maintained by the staff. These houses supply annuals to all of the state parks including the Governor's mansion in Princeton.

As can be seen the potential of this place as an arboretum and botanical garden has already been partly accomplished but the potential for the future is even greater. The volume of work involved has been great. Lewis sold the estate to Shelton College in 1956. The staff of gardeners was reduced from sixty to two. Incidentally, at Lewis' death his library was donated to the New York Botanical Gardens of which he had been a member of the Board of Directors. In 1966 the property was acquired by the State of New Jersey and added to the state park system, associated with Ringwood State Park. By this date the place was overgrown, labels had been lost and a host of other problems. The devotion and hard labor of Hans Bussink, senior horticulturist and of his assistant, John Trexler, plus a hard-working group of volunteers (including members of Highland Audubon Society and the Ringwood Garden Club) and professional people has brought the place to a high level of beauty and botanical significance in the brief time since acquisition by the State.

The park is open all year to everyone from a half hour after sunrise to sunset. If you wish to obtain a map with a detailed list of plantings and their sequence of bloom, just send a return self-addressed, stamped envelope to Ringwood State Park, Box 1304, Ringwood, N. J. 07456.

To get there: Garden State Parkway to Route 17 North. Just before Sloatsburg turn right on Silver Mind Road to Sloatsburg Road, following directions to Ringwood State Park. Continue past the entrance to Ringwood Manor a few hundred feet. On the right is an inconspicuous sign indicating Skylands. Turn left at this sign, proceed up the hill, pass through the beautifully sculptured eagles to the parking lot, although you may wish to drive through the park for an overview first.

From the Wanaque Reservoir side: Route 23 to Route 511 to Sloatsburg Road. Again, follow the signs to Ringwood State Park. The Skylands sign is about two miles from Route 23. Turn right at this sign and continue as directed above.

Be prepared for an inspiring visit. You will not be disappointed by Skylands Botanical Garden.

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Uncommon

by Thompson V. Palmer

photos by Clarence E. Lewis

Pinus wallichiana

Pinus wallichiana

Cedrus deodara

Cedrus deodara

Sciadopitys verticillata

Unusual Conifers for Area Gardeners

Abies concolor	white fir
Abies homolepis	Nikko fir
Abies pinsapo	Spanish fir
Calacedrus decurrens	incense-cedar
Cedrus atlantica	cedar
Chamaecyparis obtusa	Hinoki cypress
Cunninghamia lanceolata *	Chinese fir
Cupressocyparis leylandi	Leyland-cypress
Metasequoia glyptostroboides *	dawn redwood
Picea engelmanni	Engelmann spruce
Picea omorika	Serbian spruce
Picea orientalis	Oriental spruce
Pinus bungeana	lace bark pine
Pinus cembra	Swiss stone pine
Pinus cembroides edulis	pinyon pine
Pinus parviflora	Japanese white pine
Pinus peuce	Macedonian pine
Pinus pinaster	cluster pine
Pinus wallichiana	Himalayan pine
Pseudolarix amabilis *	golden-larch
Sciadopitys verticillata	Japanese umbrella pine
Taxodium distichum *	bald cypress

* Deciduous

I have long realized that there are many woody plants that are seldom grown by area gardeners. These underused plants could add variety and interest to our landscaping. I assume one reason they are not planted is that most people have not heard of them. Some of these novelties can be seen growing in arboretums but are seldom carried by nurserymen.

It is a rewarding hobby and worth the effort to seek out these unusuals and plant them on your own grounds.

Some of these would be ideal specimens for the lawn, and others would be distinctive on other parts of the property. Part of my idea is to suggest alternatives to the commonly seen Norway and Colorado spruce, white and Austrian pine, Canadian hemlock, and other familiar kinds. There is nothing wrong with these, but why not try something else for a change?

Let us start with the spruces. There are many species that grow into handsome lawn specimens but I will mention just three. First there is Engelmann spruce *(Picea engelmanni),* native to the same part of the country as the Colorado spruce. It is almost always blue appearing but instead of the dense, narrow form of the Colorado it has a looser, more informal habit of growth, much more interesting. Another good one is the Serbian spruce *(Picea omorika).* Here the bluish underside of each needle gives it a distinctive two-tone look that shimmers in the sunlight. It too grows informally but is generally narrower. The third suggestion is the Oriental spruce *(Picea orientalis).* It has unique short needles of an impressive dark green.

Let's turn to the pines. Visitors invariably exclaim over the graceful form and the long pendulous needles of the Himalayan Pine *(Pinus wallichiana).* Its glaucous sheen gives it additional merit. Yet how seldom this desirable tree is seen around our homes. There are several other five-needle pines of much interest but I will mention just three. Needles of the Swiss stone pine *(Pinus cembra)*

Conifers for Area Gardens

resemble our white pine but the growth habit is different. It is much smaller and slower growing, which contributes to a compact, comparatively narrow form. It is a real gem, and should be located to be seen at close range. Different is the intense green of the Macedonian pine *(Pinus peuce).* My plant has five upright stems, which is not typical, but it has a trim, bushy appearance. I am also curious about the eventual form of the short needled Japanese white pine *(Pinus parviflora).* In its youth it seems quite unpredictable. It also has a bluish cast.

Then there is the three-needled lace bark pine *(Pinus bungeana).* Its stiff light green needles and flaky bark make it different and appealing. Worth mentioning among the two-needlers is the monstrous cluster pine *(Pinus pinaster).* It has nine inch glossy green needles; the tree is unusually bushy and fast growing. On the other hand I am willing to wait for the modest growing pinyon pine *(Pinus cembroides edulis),* with some solitary needles and some in bundles of two, which are not over two inches long. Will I ever have the privilege of tasting the edible nuts? Its obstinate slow growth makes me doubtful that I ever will.

The Japanese umbrella pine *(Sciadopitys verticillata)* is not a pine at all nor is it umbrella shaped. However, there are whorls of needles at the ends of the branchlets that project outward like the ribs of an umbrella; hence the name. It grows slowly and is "different"; worth a prominent place on the home grounds.

For majesty in the garden we should plant the true cedars, the Deodar, Lebanon and Atlas. The latter has a better known cultivar of true blue, but the grass green of the species form *(Cedrus atlantica),* is also lovely. All three cedars need plenty of room to show off the beauty of their wide spreading branches.

Aristocrats of the evergreen conifers are the firs. The Spanish fir *(Abies pinsapo)* is truly elegant. It has perfect symmetrical form and the needles are dense and firm. Entirely different is our native white fir *(Abies concolor).* It becomes a medium sized tree. Its two inch needles, soft to the touch, are the longest among the firs. My favorite fir is the dark green Nikko fir *(Abies homolepis).* When the undersides of the needles are seen they have two silvery white lines, thus contrasting strikingly with the dark green. Growth seems slow, contributing to a dense, compact pyramid.

Commonly when we think of the more narrow, upright evergreens we visualize arborvitae or columnar junipers, but I would like to point out some others. The Leyland-cypress *(Cupressocyparis leylandi)* has delightful soft foliage of rich green. It is of very rapid columnar growth. Another with somewhat similar color and texture is the incense-cedar

My idea is to suggest alternatives to the commonly seen Norway and Colorado spruce, white and Austrian pine, Canadian hemlock, and other familiar kinds.

(Calocedrus decurrens), an exclamation point in the garden. However, the finest of these upright growers, a little broader pyramid, is the species form of the Hinoki cypress *(Chamaecyparis obtusa).* It will prosper in either sun or shade and its rich green flat leaves, denser than arborvitae, eventually bear exquisite tiny deep brown cones in small clusters. It has many dwarf forms, all of them excellent, but these "rock garden" types are a story in themselves.

The deciduous conifers should not be neglected because they have their own special appeal. One is the golden-larch *(Pseudolarix amabilis),* the only yellow tinted conifer I have. It is especially admired with its soft new growth in spring and its golden fall coloring. The tree is graceful with pendulous branches.

Perhaps you would like a fast grower. Dawn redwood *(Metasequoia glyptostroboides)* can travel upwards three feet a year and nothing is prettier than its soft green needles. A third worthy deciduous is the bald cypress *(Taxodium distichum),* which develops a narrow oval shape. It grows best in a wet place but doesn't demand it. The yellow color in the fall is noticeable at some distance.

I have by no means mentioned all the unusual conifers that might be tried, as the list is long. However, I will recommend just one more, the Chinese fir *(Cunninghamia lanceolata).* The one I have has new growth each spring of a silver blue color. The broad flat fronds are composed of two inch needles, noticeably stiff, and sharp-pointed at their tips. Of the trees I have discussed it is the only one that asks a slightly more favorable location, protected from harsh north winds.

None of these conifers are difficult to grow. All they require is good garden soil with fair drainage. Peat moss can be added if necessary. My failures have been minimal and generally occurred within one or two years after planting, indicating a variety unsuitable for this region.

It has been a great satisfaction to observe the growth and development from year to year of these little known and used trees. Where do you find these special delights? You will have to become a persistent sleuth. Try the specialty and rare plant nurseries, including those from the west coast. Sometimes a local nursery may stock a few but in any case it would be worth prodding your favorite nurseryman—it just might turn out that some of these more uncommon plants could become best sellers for him. So why not have some brand new plants adorning your place?

Thompson V. Palmer is a retired nurseryman who has continued his interest in growing plants at his home. Much of his time is now taken up with a rock garden as well as a wild garden. He also has many dwarf evergreens and rhododendrons and a collection of unusual woody plants.

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The author reacts to the stock in a nursery while shopping for plants for her store in Norristown.

photos by Steven Goldblatt

a radical change

A young woman creates success when she changes from "I don't like what I'm doing" to "I'll do what I like."

by Marsha White

When I returned to the working world several years ago, my only skills were those of an office worker. So without a second thought about whether I'd like it or not, that is where I placed myself. After several months of lime-green walls and Muzak, I knew I'd have to make some rather radical changes.

I took evening school courses and considered becoming a social worker. But I never felt committed to that course of action. While in school, I joined a group of women who, like me, were exploring options. I soon saw that I had choices to make. I didn't have to remain in a job that bored me. Our motto for me became "If you don't like what you're doing, do what you like." It was as simple as that.

The group spent several sessions discussing my potential. I was no more comfortable in school than I was in the office so we eliminated that course of action. We concentrated on my interests: painting, stained glass and, most of all, making things grow—everything from orchids to garbage gardens. I'd always liked working with soil and plants. Since most of the women had been to my house, they knew it resembled a tropical rain forest. From a converted screened porch greenhouse, to the basement fitted with fluorescent lights for plants, every nook and cranny had some sort of foliage in it. We began to consider what kind of business would incorporate my love of plants and earning a living.

We began to consider what kind of business would incorporate my love of plants and earning a living. We first discussed opening a store but that was quickly overruled for several reasons. First, opening a store would involve much more money that I had available. I was also afraid that a store would take me away from my two young children for too long a time. There seemed to be so many obstacles to overcome that I was about to scrap it all and stay with my secure but boring job. The following week, one of the women in the group told me about a new concept in plant sales—bringing plants to peoples' homes, talking about them and then selling them there. This idea later became known as your friendly neighborhood "plant party," a term I have always disliked. But that night, five years ago, we had no preconceived

Transporting the plants from the nursery

ideas of what a Plant Party would be like. The more I thought about the idea the more it interested me. It meant being able to communicate my ideas about growing plants to large numbers of people at one time, to explain and make clear to them in easy understandable terms what I had culled from the reading and growing I had done over the years.

Things moved rather quickly after that. I already had my greenhouse, so storage for the plants I'd need was no problem. A friend, who was a commercial artist, helped me to devise a brochure to advertise. In it, we described everything I hoped to accomplish at the "plant care workshop." I intended to demonstrate all sorts of mystifying things, like repotting, propagating and air layering. Other friends became excited by this idea and added their own thoughts. One of them, a potter, suggested that I not only sell plants at these workshops, but also all sorts of plant care items as well. She spent the summer throwing special pots for us to sell at our first workshop, which I had scheduled for September. That first summer was both a joy and a nightmare. In my enthusiasm and naivete, I approached some of the nursery owners that I had dealt with in the past, expecting them to be as enthusiastic about my project as I was. I experienced nothing but discouragement and met with resistance from them. I was alternately warned about the high cost of fuel for my greenhouse, the unavailability of plant material and the great difficulties of making a living in the plant business. No one already in business was willing to divulge the names of their suppliers (an extremely well kept secret at that time). I realize now they feared that the great number of plant shops springing up all over would cut into their own business.

Finally, in desperation one day I sat down with my friendly yellow pages, and called every wholesale florist in the book. I visited all of them and learned the names of others who were not listed. My first visit to a wholesale greenhouse was an experience I'll never forget. With as much as I thought I knew about plants, I quickly realized that I knew very little indeed.

It's been a long time since that first tentative workshop, and I've come a long way toward the satisfaction I was looking for.

For my birthday that year, I asked for and received a copy of *Exotica,* the horticulturist's bible, and set about studying it. I was determined to learn the botanical name and recommended culture of every plant I encountered. Friends joked that becoming a doctor would be easier, but the Latin names were a pleasure to me. Names like *Saxifraga stolonifera* and *Dizygotheca elegantissima* were a delight to master, I also sent away for and studied the USDA correspondence courses in House Plant Care, Plant Propagation and Home Greenhouse Management. By September, my greenhouse was well stocked and I felt ready to begin.

Eager but nervous, I approached my first group. I took a close friend with me for moral support, but to my own amazement I did feel confident. I was discussing a topic that pleased and interested me and the women responded to that. I felt an immediate rapport with them. If anything, I was so excited about my subject that I consciously had to keep myself from rambling, a problem I still have, even after five years. My first session was a

continued

Partner Gail Kades and author are joined by Volunteer Stephanie Carnelli.

success. I promptly quit my office job and began looking for other bookings. A friend of mine introduced me to Robin Palley, who was writing a column called *Serendipity* for the *Philadelphia Inquirer.* She was enthusiastic about what I was doing and wrote about my work. After that, bookings were no problem, but how to fit everything in was. I spoke to women's groups, garden clubs, Girl Scout troops and anyone else who wanted to hear me. I did that for a year or so, when an acquaintance approached me about putting some of my plants in a craft shop she planned to open in a beautiful old barn near the village of Skippack. I agreed to do that and we decided to form a partnership. My new partner, Gail Kades, has become my closest friend over the past three years (a real feat among partners).

The Plant Stable, as we were first known, was a charming little store with stone walls and beamed ceilings. It had only one drawback-we never made a profit. Our setting appealed to tourists and they came by the dozens. Occasionally they bought a piece of hand thrown pottery and they loved talking to us about their own plants, but we soon learned that they were not about to haul a six foot high *Dracaena marginata* home to Galveston, Des Moines or anywhere else they were going. Gail and I were both depressed. I planned to chuck it all and just stay with the workshops, which had always proven successful, when a neighbor told Gail about a local plant shop that was for sale. We went to see the owners on a Tuesday and made settlement on The Plant Gallery on Thursday night. Our lawyer and our families were anxious but we knew it was right for us. It was centrally located between our two homes in a small shopping center in Center Square, just outside of Norristown. Unfortunately, we had to give up some charm for sheer practicality and that did bother us, so we vowed to remodel as soon as possible.

Our timing was both good and bad. The good part was that it was three weeks before Christmas and the bad part was that none of the plants in the store came up to our standards. If you've ever seen hysteria in motion, you will have some idea of how quickly we worked. Fortunately our suppliers were understanding and worked with us. Between our original Plant Stable stock and what we had stored in my greenhouse, we got it all together. Christmas was marvelous, but unfortunately the old owners had neglected their plants so badly, Gail and I really had to work hard to build a reputation. We had a wine and cheese grand opening and invited everyone we knew. We scheduled discussion groups in the store, as well as terrarium building classes and classes for children in sand art. In short, we spent months making ourselves known to the community. Our policy was to never allow a plant to leave our shop unless we were sure the new owner was aware of how to care for it. We guaranteed our stock for one month and replaced free of charge plants that careless owners killed or, even in one case, a plant that a cat ate. We patiently explained to people time and again that " . . .no, you can't grow the beautiful fern in your powder room that has no window" and " . . . yes, you will have to dirty your fingers to feel the soil before you water." (We will never tell a customer how often to water a plant.)

Gradually we began to build a clientele that truly trusted us. They brought us sick plants to nurse in my greenhouse; they came and spent hours sitting behind the counter talking about their gardens and exchanging ideas on houseplant care with other customers who came in. At times people were confused as to who was the customer and who was the sales help. One of our favorite customers comes in every Saturday, apologizes if she's late and promptly sets about waiting on other customers. At the end of the day, she picks out her own purchase and writes up her own sales slip. She refuses all pay and occasionally lets us buy her lunch. Needless to say we're very fond of her.

It's been a long time since that first tenative workshop, and I've come a long way toward the satisfaction I was looking for. Gail and I have branched out into other areas of our business. that we find both interesting and exciting, such as interior landscaping for homes and offices, flower arranging, and plant maintenance.

For all the responsibility involved in running my own business and all the pleasure I get in dealing with my customers I still think that when all is said and done, the real fun is in playing with the dirt.

Marsha White is the owner of Pots and Plants, Home Plant Care Workshops, and a partner in The Plant Gallery on Rt. 202 in Center Square. She spends her free time doing the thing she loves most in the world—playing in the dirt.

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digging for information

PLANNING TO PREVENT WINTER PROBLEMS

by Ed Lindemann

An arborist once told me that "people, unfortunately, don't call me until their tree has frightened them." That is what happened in the winter of '76. Thousands of plants were damaged or destroyed and spring found the PHS switchboard and hotline phones ringing endlessly with cries for help from distressed gardeners. As we enter the pleasant days of autumn, let's be aware that another winter is not too far in the future.

understanding the problem

The Philadelphia climate is conducive to severe winter damage on many plants. Most winter damage occurs in areas subject to extensive seasonal variations. Philadelphia summers tend to be hot and humid with temperatures reaching the 100° level; winters on the other hand may produce subzero temperatures and are often dry with little snow cover. In addition to these extreme seasonal variations, we experience abrupt changes in moisture, temperature and wind, often on a day-to-day basis during our winter months. And finally, to further aggravate the problem of winter injury Delaware Valley Gardeners grow a great variety of material, not all of which is considered hardy here.

Dormancy does not deter winter damage. Trees are subject to frost cracks, broadleaved and needle evergreens suffer winter drying, perennials are heaved out of the ground and container grown plants are subject to frozen roots. Actually, all plants are subject to some degree of winter damage.

Environment versus plant is the situation. Drainage, soil type, exposure and light are environmental factors. A plant's physical characteristics both above and below the soil level offer the resistance needed for the plant to survive. It is the weather that determines if a plant is hardy within its environment. Temperature, wind, and moisture both in the soil and air create the weather conditions. Consider all of the factors that I have mentioned and picture them working in combination. Example: the stronger the wind is blowing, the faster the rate of transpiration on the surface of a plant's leaf. The area of the leaf's surface has a direct bearing on the transpiration rate. The more porous the soil, the better the drainage and the less chance the roots will freeze. A deep long-lasting cover of snow insulates the soil and prevents heaving and rapid temperature changes. All of the factors I've mentioned are in a constant state of change creating new environmental conditions in which the plant struggles to survive.

what can be done?

In creating a new planting or when transplanting remember to prepare the soil properly and to provide for good drainage. Roots will freeze faster in heavy wet soil than in soil that drains well. If the soil is frozen then water is not available to the plant. Many people do not realize that we can experience drought in the winter as well as summer. If the weather conditions are as such that there is a long period without any rain or snow and the ground is not frozen solid, it is a good idea to check your plantings and to water if the soil seems especially dry. Plants that are growing in containers or raised beds should be checked for watering regularly throughout the winter.

Mulching serves many purposes, but it does not keep the plants from freezing as many people believe. Mulch helps prevent rapid freezing and thawing, which could cause plants to heave. The mulch acts as an insulation layer and slows down the rapid change of soil temperature. Leaves, straw, salt hay and woodchips are just some of the materials used for mulching. The choice is a personal one; just remember that the material, like any insulation, should be fluffy and contain lots of air spaces. Do not use leaves or other materials that will lay perfectly flat and become compacted when wet. Apply the mulch after the ground has frozen. Choose a mulching material that will not blow away in a strong wind. Don't remove the mulch until you are sure the ground is completely thawed.

Protecting plants from strong winds is another form of preventive maintenance that the home gardener should practice. Choose the plants carefully for their location and place the more tender varieties in a protected location. Example: broadleaved evergreens should be placed on the north side of a building where the changes in temperature, soil moisture and the wind will be less severe and abrupt. Often there is no building to provide a north wall, and if the plant is in a particularly harsh location some form of screen may be required. A protective screen should be placed on the windward side of the plants. Panels of burlap or snow fence are commonly used for screens. If burlap is used leave a space at the bottom of the sides for air circulation and to ease the wind resistance. If possible point one corner of the screen into the wind rather than a broad flat side. Nothing is more unattractive in the landscape than to have shredded burlap hanging from the frames of your wind barriers.

Antidesiccants are available to the home gardener and are especially helpful in the winter protection of newly transplanted material. An antidesiccant is liquid plastic that is diluted with water; it is sprayed on the plant's foliage to prevent rapid water loss through transpiration.

Snow and ice add considerable weight to plants often causing them to break and split. Also, snow and ice have damaged many foundation plantings when sliding off a steep roof. Heavy wet snow can be removed from plants before it freezes. Take a broom and gently tap the branches from the underside allowing the snow to "fluff" off the limbs. Never try to knock ice or frozen snow off plants. Place foundation plantings far enough away from the actual building line to allow for snow slides without burying the plants.

I've tried to show some factors involved in the reaction of plants to their winter environmental conditions and some of the precautions that we can all take to control winter damage. The factors and elements are constantly changing creating new microclimates. No matter how many precautions we take there will always be some degree of winter damage. But I think by being aware of what the problems are we can better prepare to face the inevitable winter ahead.

●

photo by author

Persicum cyclamen

Persicum cyclamen

"How do you raise a prize winning cyclamen?"

Ours came from a trash heap. It captured a blue ribbon in the Novice Class and the Pennsylvania Horticultural Society's Best Single Plant ribbon in the 1977 Philadelphia Flower and Garden Show.

In June of 1974, my mother, Hermina Tassone, rescued a rather large, bedraggled plant from a trash heap behind Simcox's Flower Shop, in Mercerville, New Jersey. She passed her find along to my husband, John, and me, and we put it in the trunk of our car forgetting all about it until August.

The then dormant corm progressed from the trunk to our garage where it rested in its original soil and pot until October. After stumbling over it, I decided to repot it immediately by replacing the old soil with fresh, sterile, commercial potting soil. I selected a 12 in. white plastic hanging container and lined the bottom with drainage stones; I replanted the corm at its original depth so that one half of the corm remained exposed above the soil line. I placed it on a vacant ceiling hook in a semi-shady portion of our living room.

Leaf development was slow, sparse, and spindly until we moved it into our not quite finished greenhouse in November of 1975. Hoping to promote better leaf growth, I hoisted it up to a hook over the center workbench directly above the humidifier and only a few inches below the flourescent light; that spot also happens to be the warmest in our greenhouse. The plant rewarded us with a display of approximately a dozen white blossoms in February of 1976. Contrary to our reading and experience with plants that require a resting period, the expected dormant period never materialized. Instead, it continued to bloom and added lush green leaves throughout the next year. We fertilized it once every two weeks with a solution of Peter's 15-30-15 general house plant fertilizer. Then in November of 1976, my husband switched to a 25% dilute solution of the same fertilizer each time it was watered. The cyclamen managed to grow and to survive two winterkills in 1977, which destroyed three quarters of the rest of our stock. Temperatures plummetted from a normally cold 40° to 50° F to a devastatingly freezing 0 to -15 degrees below in our greenhouse.

Seemingly overnight, late in February of 1977, we were startled to behold the cyclamen covered with masses of white flowers. I was now grateful for the hanging container that made it easy to shift it in and out of the sun to prevent what looked like heat stroke prostration. (We are not certain if this previously unnoticed sun sensitivity had occurred before, or if this was due to the increased size of the plant. Nevertheless, we were now careful that it received only late afternoon sun and that the soil in the pot never dried out.) Each leaf was meticulously groomed; each blossom and stem was removed at the first sign of fading. One day I counted 66 fully developed flowers and dozens of still developing buds. That's when we decided to enter the plant in the Flower & Garden Show—two days before the preregistration deadline.

As of this writing, our award winning plant continues to grow, produces new leaves, does not shed any old ones, and maintains a half-dozen or so flowers. Obviously, luck, love, and superior plant stock all played their parts well.

P.S. Mr. Simcox, while sending us his congratulations, has also sent word that his trash heap will be devoid of all future prize winners.

Judith Oruska

Don't Sit Under The Apple Tree With Any One Else But Hedrick

by Julie Morris

New grape introductions spark the author's curiosity about how grapes were first cultivated in this country. Her research shows we have lost considerable ground in cultivating fruits since the 19th century. Some groups, however, have begun to take steps toward finding and preserving some of the old varieties.

A recent issue of the *Avant Gardener* newsletter gave rave notices to the introduction of two new table grapes. The newsletter noted the resemblance of the new varieties to the two all-time American favorites, Concord and Delaware. The new grapes sound tempting and should entice the "cultivators of the vine" among us.

The first variety, similar to Concord, has been named Festivee. It was developed at the Horticultural Research Institute in Canada, and is available from the Foster Nursery in Fredonia, New York, 14063. Unlike Concord, the whole fruit—skin and all—can be eaten. The second new variety as yet unnamed is seedless and reminiscent of the Delaware grape. The New York Agricultural Experiment Station expects to name it this year and vines will be offered for sale by the New York State Fruit Testing Cooperative Association, Geneva, N. Y. 14456 (membership $4.00/year).

I became fascinated by these introductions and wanted to know more about grape cultivation in America, so I began reading through the series on fruit published by the New York Agricultural Experiment Station between 1903 and 1925. The history of grapes and the other fruits that have become so popular with the home orchardists are covered in these publications. Thanks to what I found in the *Grapes of New York,* I could understand some of the reasons for the flurry of excitement caused by the new varieties. For years the Delaware grape has been used as the standard to measure the quality of other American grapes because of the high quality of its fruit and its adaptability to a wide range of climatic and soil conditions. The Delaware grape first grew in Frenchtown, New Jersey, in the early part of the 19th century and was taken to Delaware, Ohio in 1849, where it was named.

The Concord grape is probably the best known of the American grapes and is related to at least 75% of the grapes, purebred and crossbred, in the eastern United States. Concord was first grown by E. W. Bull in Massachusetts, who planted seeds of the wild grape in 1843. The seedlings fruited in 1849, and one was named Concord. It was first exhibited at the Massachusetts Horticultural Society in 1853. Just one year later the first authentic hybrid vine, a cross between the American native grape and a European variety was exhibited.

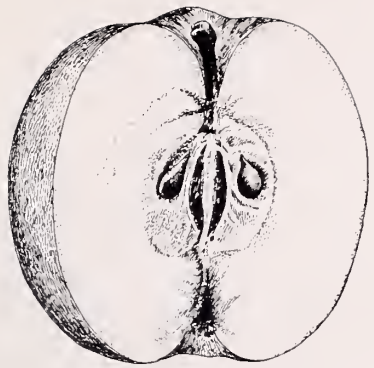
The trial and error breeding methods of the 19th century pomologists were responsible for the tremendous number of varieties that were available on trade lists from time to time. The American grape alone gave rise to 800 domestic varieties,

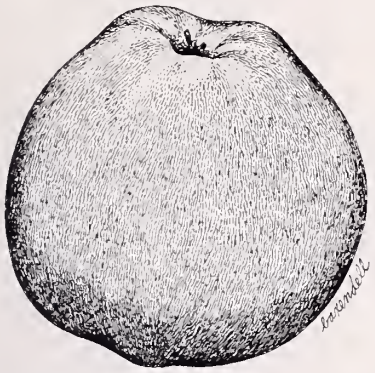
The American grape alone gave rise to 800 domestic varieties, while work with the native plum produced 200 varieties and the raspberry over 300 varieties.

while work with the native plum produced 200 varieties and the raspberry over 300 varieties. Interest in fruit growing burgeoned in the 19th century, so much so that the illustrious parade of pomologists working in the American fruit industry has never been equalled in influence or number. The best chronicle of the developments and changes in fruit growing were the books published by the New York Agricultural Experiment Station. *Apples of New York* edited by S. A. Beach, was the first in the series and was published in 1903. Ulysses P. Hedrick, horticulturist at the Station, edited the later volumes: *The Grapes of New York,* 1908; *The Plums of New York,* 1910; *The Cherries of New York,* 1915; *The Peaches of New York,* 1917; *The Pears of New York,* 1921; and *The Small Fruits of New York,* 1925. The volumes are actually the Station's report for the year preceeding publication. Each is several hundred pages in length and with the exception of *Apples,* which appears as two small volumes, the remaining titles are bound as oversize books so they have not been on the regular shelves in the Library, which is one reason people haven't known about them.

I am sure many readers recognize U. P. Hedrick who was involved with many other publications from the Experiment Station. He was the director for many years after serving as horticulturist and is best known as the author of the only book of its time on the history of American horticulture, *History of Horticulture,* published in 1950. Every now and then titles from the New York series appear on book dealers' lists but the renewed interest of many gardeners in the older fruit varieties is making them a rare find.

The history of fruit as a horticultural commodity in the United States is really the history of the apple. By 1872, Charles Downing, the distinguished pomologist, listed over 1,800 varieties that had been tested in this country and 1,099 of them were American in origin. It isn't likely that more than one-third of them were ever in cultivation at one time and most are lost now, but it should be obvious that the apple was the appropriate subject for the Agricultural Experiment Station's first major publication on the fruits of New York. The reports included as much background on each fruit as could be found with the information sources listed. Hedrick had a keen sense of history so that the volumes he edited were full of biographical footnotes crediting the work of earlier pomologists and adding to the value of the work as a real chronicle of the culture of fruit in America. Each volume also contains as the frontispiece a portrait of one of the country's leading pomologists so there is no doubt whom Hedrick credits as the leading lights in the





golden age of pomology.

In addition to exact descriptions of the varieties discussed, Hedrick provides all sorts of incidental information so that we know that the Greek, Theophrastus, wrote about cherries as early as 300 B.C. and that the English herbalists Turner, Gerarde, Parkinson and Johnson wrote about the cultivation of the cherry in the 16th and 17th centuries. Hedrick includes the astute discussion of the American botanist Asa Gray in the *Peaches of New York,* where he notes the similarities between plants in eastern Asia and eastern America, and how well fruit and ornamental plants brought from China and Japan grow in American gardens.

In 1921 Hedrick wrote the *Cyclopedia of Hardy Fruits.* A second and enlarged edition was published in 1938. The *Cyclopedia* was prepared with much the same intent as present day garden encyclopedias to aid the home gardener with useful and concise information. Hedrick explained that the two basic references for the home orchardist, Andrew Jackson Downings' *The Fruit and Fruit Trees of America,* and J. J. Thomas' *American Fruit Culturist* had been used in America for two generations and were "worn out tools." He also noted that many of the varieties they described were European and had never been cultivated in this country, further they didn't contain any of the 20th century varieties.

The *Cyclopedia* included all the fruits, but not all the varieties, that were in the six volumes on the fruits of New York. The information was more concise and limited to identification, choice, names, and regions where and when varieties originated. The intent of the book was to stimulate the desire to grow better fruits. There are color and black and white photographs illustrating the work as well as line drawings of many of the varieties.

In the early years of the 20th century economic conditions forced most commercial fruit growers to reduce the number of fruit varieties they cultivated. Today most of us can count on our fingers the number of different kinds of any one fruit available in nursery catalogs. However, the interest expressed by many home orchardists in finding and growing some of the old time fruit varieties has inspired the nursery industry to seek out and make available these once forgotten and neglected fruits. The apple orchard at Sturbridge Village in Massachusetts contains about 100 varieties of apples and offers scions for sale to interested growers. The apple varieties at Sturbridge were collected over the years from derelict orchards and areas under development. The orchard originally was in Worcester but over the past few years has been moved permanently to Sturbridge Village.

However, the interest expressed by many home orchardists in finding and growing some of the old time fruit varieties has inspired the nursery industry to seek out and make available these once forgotten and neglected fruits.

Southmeadow Fruit Garden in Birmingham, Michigan offers a long list of old-time fruit of many kinds and its illustrated 88-page catalog is a good reference for the home gardener. Where possible, Southmeadow includes the history of a given variety; from it we know that Jefferson's favorite apple was Esopus Spitzenberg, and that Washington grew Newtown Pippins. While the hundreds of varieties of fruits once grown may never be available again, it is good to know that there are sources for some of the "lost" varieties. Thanks to work such as that carried on by the New York Agricultural Experiment Station, there is also a permanent chronicle of "the Golden Age of Pomology."

SELECTED REFERENCES

**A View on the Cultivation of Fruit Trees*
William Coxe, Philadelphia, 1817

The first standard American work on pomology.

**The Fruit and Fruit Trees of America*
Andrew Jackson Downing, New York, 1845

The most comprehensive work in its field for most of the 19th century.

The American Fruit Culturist
John Jacob Thomas, New York, 1846

Thomas was one of the three pomologists credited with creating the science in this country; the others were Patrick Barry and Andrew Jackson Downing.

Sketch on the Evolution of Our Native Fruits
Liberty Hyde Bailey, The Macmillan Co., New York, 1898

Bailey wrote this book on American fruits in answer to criticism that the United States had done little to develop its edible native plants.

* See FROM SEED TO FLOWER, PHS, Philadelphia, 1976.

SOURCES

Southmeadow Fruit Gardens
2363 Telbury Place
Birmingham, MI 48009 — Catalog $5.00

CURRENT PERIODICALS

Fruit Varieties Journal
The American Pomological Society
103 Tyson Building
University Park, PA 16802 — Subscription $10.00

The Vinifera Wine Growers Journal
Vinifera Wine Growers Association
The Plains, VA 22171

Julie Morris is a garden consultant in Newport, Rhode Island, specializing in 18th and 19th century garden restoration. Morris recently taught a course in Victorian gardens, design and plant material. She serves on the Newport Preservation Society's Green Animals' Committee, which is working to preserve this unique topiary garden.

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Crab apple vista at Skylands (spring).
See story on p. 24.

THE green scene

HORTICULTURE IN THE DELAWARE VALLEY
NOVEMBER • DECEMBER • 1977 $1.50

Forcing vegetables for
the Flower & Garden Show.
See story on page 5.


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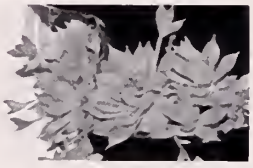
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THE green scene

HORTICULTURE IN THE DELAWARE VALLEY

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in this issue

Front Cover: A cluster of Burpee Basket Pak tomatoes. See page 5.

Back Cover: Burpee's Golden Beets show distinctive yellow petioles.

Cover photos taken in February by Edmund B. Gilchrist, Jr.

Make of It What You Will

Psychologist Carl Rogers shocked teachers attending a Harvard conference on student-centered learning 27 years ago when he said they should do away with grades, credits and degrees. He felt these gauged only inconsequential aspects of learning. Rogers believes that significant learning is vital, self-initiated and self-directed.

That view is not so outrageous when we consider that universities and colleges have just begun to capitalize on adult learning in the last few decades. Yet organizations like PHS were founded on the principle that horticulture need not be learned in the classroom; it probably is learned best through experience. Good horticulturists teach each other and need not be preempted by experts; those who care and know, share. It is interest and curiosity that is the basis for our affiliation with one another, for our activities and publications.

Fortunately, we continue to operate on the Rogerian principle that people can learn best by getting together with others and finding out what they want to know. A beautifully grown plant does not need the sanction of institutionalized authority. The amateur's contribution is as significant as the academician's. For example, last year approximately 72 articles written by 55 authors were published in *Green Scene*. Of these authors, 10 could be considered professional writers; e.g., at least four of them had published books. Eighteen had published one or more horticultural articles, *and 27 of them had never written any articles on any subject before.* Two of our first-time authors were indoor gardeners who had the pleasure of seeing their articles reprinted in the *New York Times*. Another first-timer saw her article on wildflower rescue reprinted in an important 64-page booklet about the environment published by the Brooklyn Botanic Garden. These achievements show us that the work of serious horticulturists is significant and worth sharing.

The beauty of horticulture is that all gardens, indoor and outdoor, are individual laboratories because so many variables exist in each one. Each grower has a different perception of his or her gardening experience; sharing it recreates the experience for others. A mentor of mine has said "Participation is a function of health; communication is a function of love." I see that life does work best that way. And so does *Green Scene*.

If you don't see the kind of articles you'd like to see here, let us know. If you have had a good gardening experience or idea, but feel tentative about writing, call us. We'll work with you.

It's your publication; make of it what you will.

Jean Byrne
Editor

Young green ice VP lettuce

CREATING MIDSUMMER IN MARCH CAN BE A YEAR-ROUND JOB

by Lois A. Stringer

Forcing vegetables for the Show in March takes a lot of advance planning and experimenting.

Forcing plants for flower and garden shows is part science and part educated guessing.

In the summer of 1974 the Pennsylvania Horticultural Society asked the W. Atlee Burpee Co. if they would be interested in putting in a major vegetable garden display for the next spring Show; PHS offered 5,600 square feet (about the size of a city lot) to work in.

continued

photos by Edmund B. Gilchrist, Jr.

Top: The yellow plum tomatoes make a pleasant contrast to the more common red types in salads and on relish trays.

Bottom: Gladys Mims, who with Austin Mims manages the Fordhook Farms greenhouses, waters dwarf marigolds in individual pots.

Note: All of the photos were shot in February, before the '77 Flower & Garden Show.

Burpee's NUGGET ™ Hybrid Marigolds in mixed colors were forced in mats made of plastic and chicken wire and filled with Burpee Planting formula.

Flats of tomatoes growing in Jiffy-7 peat pellets.

Only a small space had been allotted to vegetables in previous years. The decision to use a four-season design covering everything from asparagus to zucchini added to the challenge. Theodore C. Torrey (director of vegetable research at Burpee's Santa Paula, California farm), then farm manager at Fordhook Farms in Doylestown, and his farm and greenhouse staff geared to grow approximately 50 kinds of vegetables. Many types, such as Brussels sprouts, pole beans, eggplant and peppers, had only been grown as experimental greenhouse crops where fine timing and "show" weren't so important.

Since then, vegetables have become an integral part of the display for container culture and demonstrating plant breeding techniques, along with the colorful, bright marigolds and other flowers, long a Burpee hallmark.

Timing and the amount and intensity of light are the most critical factors in forcing plants out of season. Failures don't make it to a Show, so the visitors see only the plants that succeed.

Burpee records are carefully kept from year to year on each type and variety grown. Accumulated data make schedules easier, but unusual weather conditions leave the grower breathless to see if the prize specimens will be at prime. In spite of severe cold in the 1976-77 winter, light intensities were extremely high and almost brought plants to peak too soon.

Green Ice VP *lettuce performs beautifully in the winter greenhouse with its longstanding crisp and heavily ruffled leaves. Because we wanted to show it at

* VP — protected variety under seed patent.

Allow nearly twice the time of an outdoor crop for winter production.

the bolting stage (going to seed) to illustrate seed production, we started extra plants much earlier than usual. A smaller sowing was made two weeks later for backup. We treated a few plants with gibberellic acid and kept the greenhouse soil drier than usual to shock plants when bolting did not occur. It was not until a scant week before the Show that some flowering stalks appeared.

We choose containers for the exhibit to suit the type of plant and intended use in the design. Careful attention to watering, extra lighting if needed, insect and disease control, plus tying and pruning goes on through the whole cycle.

Getting to the Show can present some problems. For example, how do you keep the tomatoes from dropping from the vines en route. Slings? Sounds ridiculous, but that's one way to ship plants laden with fully ripe fruit. We tie cheesecloth supports around clusters to prevent fruit from dropping. Or grappling a hanging basket of red cherry tomatoes with 4-ft. to 6-ft. long octopus-like branches can be frustrating, but hanging them from the top of a large truck with straps to prevent side sway and swing, assures the plants' arrival with almost all fruit intact.

After forcing, shipping is the second most critical period. Plants must be protected from severe cold and warm temperatures by wrapping and shipping in heated trucks for the 25-mile trip from Fordhook Farms to the Philadelphia Civic Center. Tougher, bigger plants go first; more delicate ones and cut flowers last. The number of truck loads of materials going to the Show varies, but we have sent six trucks in a range of sizes for set-up and two for refills.

Final planting of the garden at the Show is when all of the work of timing, container selection, watering, pruning and travel come together. The pots of Burpee Golden Zucchini VP squash are sunk in the mulch, Basket Pak tomato tripod assembled, and rows of beets and carrots, grown in specially adapted plastic-lined boxes, are lifted out in neat rows and set in the garden.

On opening day, our aim is for a garden that looks as if it had been growing outdoors for months to reach a peak of abundance. Yet, the previous week it existed only as an idea, boards, mulch and individual plants.

What if something goes wrong and there's no backup plant? Change the plan, just as you would in your home garden.

If there's a general word of advice we could give exhibitors thinking about using vegetables for the Philadelphia Flower and Garden Show, it would be PLAN. Run advance timing trials of prospective varieties for exhibition (see box for examples). If you're thinking of something for the 1979 Show, this fall and winter are the times to give some of your favorite varieties a dry run in your greenhouse. Allow nearly twice the time of an outdoor crop for winter production.

Burpee's 1978 garden plan has been underway since early summer with new vegetable varieties and techniques to conquer.

what's so about sowing

Some examples of the variation in planting times follow. Dates given are typical for a Show that falls on the second week in March in the Delaware Valley area. None of these varieties need supplemental light in the greenhouses. Planting mixture is about 50-50 Burpee Planting Formula and sterilized garden soil.

- Tomato, Burpee's VF Hybrid. Sow about September 20-30, maturity late February and into early March. Large plants require 10-13 in. pots plus either a stake, cage or other method of support.
- Tomato, Burpee's Pixie Hybrid for 6-in. pots. Sow about October 15.
- Squash, Burpee Golden Zucchini VP. Start December 15 in 3-in. Jiffy pots then transplant two each to 12-in. pots.
- Lettuce, Green Ice VP. Can be grown in 5-in. pots or in rows in greenhouse bench, starting about December 20.
- Swiss chard, either Burpee's Rhubarb (red type) or Fordhook Giant will make good size plants in 6-in. pots from a mid-October sowing.

Lois A. Stringer is the vegetable trials manager at Fordhook Farms. She also contributes to the planning, design, growing and construction of Burpee exhibits at the Philadelphia Flower & Garden Shows.

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Orchid cactus

Leaf Succulents: Colorful and Easy Care

House Plants

by Joanne Crouse Marano

Joanne Crouse Marano has participated with her husband and children in the Philadelphia Flower & Garden Show and Harvest Show for the past eight or nine years. She and her husband won the Horticultural Sweepstakes in 1977; they were runners-up in 1976. Joanne Marano lectures to garden clubs on container gardening including succulents. She teaches container gardening at Cheltenham Adult School.

My interest and enthusiasm for leaf succulents as house plants developed five or six years ago when I agreed to do a windowsill collection at the Flower & Garden Show. I had chosen the shady windowsill class and had given its composition a lot of time and thought. About six weeks before the Show, however, I was asked also to do a sunny windowsill because someone had cancelled their entry. I had a collection of succulents in the greenhouse and I agreed that if they could be the basis of my entry, I would do it. My kitchen has a rather large window so I moved the plants from the greenhouse into the kitchen for the next six weeks. A large part of the collection were the leaf succulents: aeoniums, agaves, aloes, crassula, echeveria, euphorbia, haworthia, kalanchoe, pachyphytum, portulacaria, sedum, and zygocactus.

Their color and texture combinations were endless. It was possible to achieve the color pattern usually associated with a sunny windowsill collection without depending on bloom. When blooms were present, they were exquisite and long-lasting.

Sure enough the sunny windowsill won a blue ribbon and the PHS ribbon for more than three plants staged. Since then the feeling I have for my collection of leaf succulents has increased with each day. They always have something to give: color, texture, bloom and new plants. They are a good answer to the oft asked question—what plant material will do well in a less than perfect house environment.

Leaf succulents as a group are well adapted to the heat, drought and neglect that plants are likely to find indoors. The only real need indoor succulents have is a place in the sun. Several succulents such as *Echeveria* 'Party-Dress,' *Echeveria agavoides* and *Kalanchoe tomentosa* arranged on a sunny windowsill will add greatly to a room's appearance. If the sill is not wide enough to accommodate a grouping of plants, a set of glass shelves can be attached to the frame. Even a small indoor windowbox could be attached to the sill. A box 5 in. wide by 5 in. deep by 2 ft. would be manageable. As a general rule, porous clay pots are best for the plants and can be arranged in the windowbox. The plants should be turned to promote even growth. Decorative glazed pots can be used if adequate drainage is provided. Many of these pots come with saucers. It is wise to put a layer of pebbles in the saucer to avoid having the pot sitting in water.

baskets

Swivel hooks can be attached to the window frame or ceiling to accommodate a hanging basket or two. I have found several small baskets preferable to a large one, unless the window area is extensive. Even then an asymmetrical basket is more pleasing to the eye and does not restrict light or the view from the window.

The following leaf succulents adapt well to basket culture: *Sedum dasyphyllum* (love and tangle), a small blue sedum that rarely flowers when grown indoors; *Othonna crassifolia* (little pickles), tiny fresh green leaves with small bright yellow flowers year-round; *Sedum morganianum* (burro's tail); *Sedum adolphi* (golden sedum), thick yellow-green leaves with white flowers; *Sedum guatemalense* (Christmas cheer) has shiny green leaves, which turn bright red in the sun; *Echeveria* 'Pixie,' a miniature echeveria that is a lovely bluish color with a center rosette from which offsets grow on slender stems in turn having offsets; *Senecio herreianus* (gooseberry kleinia), green elliptic leaves with many translucent lines; *Senecio radicans* (creeping berries), glaucous-green leaves with a longitudinal stripe; *Senecio rowleyanus* (string-of-beads), green leaves about ¼ in. in diameter with a narrow translucent band; *Ceropegia woodi* (rosary vine or string-of-hearts), dark green, heart-shaped leaves

continued

marbled with white on the upper surface; *Kalanchoe pumila,* powdery-white leaves with lavender-pink flowers in spring.

indestructible

The agaves as a group form plants that are almost indestructible. *Agave americana* (century plant) and *Agave americana variegata* can be contained in small pots for several years before they outgrow their use as house plants. As they form numerous offsets, the mature plants can be replaced periodically. At this writing, I have *A. americana* plants ranging from a 3-in. size in the house to one 5½ ft. high and 6 ft. in diameter in the greenhouse. *Agave potatorum* and *Agave victoriae-reginae* have a much more compact growth habit but rarely have offsets. *Agave stricta* forms a striking accent plant when displayed alone; however, in the 13 years I have had the plants (from plants in 2¼-in. pots) they have never had an offset.

Crassula argentea (jade tree) in its many forms makes a dependable succulent house plant. Trained in a bonsai container and in bloom, it is an asset to a collection.

A dish garden planted in a clay saucer with only four succulent euphorbia has been one of my more successful groups for compatibility and long-range growth patterns: *Euphorbia milli* (dwarf), *Euphorbia obesa* (two plants), *Euphorbia ornithopus,* and *Euphorbia trigona* have been growing well for more than a year. As they tend to grow slowly, it will be several years before any one will have to be replaced. That is an important factor to consider in selecting plant material. It is always best to underplant, using stone and pieces of wood to give emphasis to the design. Occasionally a euphorbia will react to a change in environment by developing yellow leaves, which then drop off. The tendency is to overwater in an attempt to correct that condition. Actually the plant should be watered as usual or even have its watering reduced until evidence of new growth is noticed. I had a beautiful *E. caput-medusae* that suddenly developed yellowing branches. It was planted in a dish garden and I removed it to a small clay pot and withheld water for several weeks. With evidence of new growth, I resumed the watering schedule and it is once again a handsome plant.

I give all my succulents, whether in the house or greenhouse, a dilute solution of Peter's Fertilizer (20-20-20, ¼ teaspoonful to a gallon of water) each time they are watered during their growing season. I am sure many succulent growers have developed a different program; however, this method has produced excellent results for me.

lights

Indoor light gardening has been a tremendous boon to the succulent grower. No longer are we limited to a sunny window. Using overhead fluorescent lights or a spot enables us to place succulents anywhere in a room. A warm white and a cool white bulb are usually recommended in the multibulb fixtures. The grower who is not mechanically inclined can develop a system from stock material. I have found turntables of varying sizes an asset to growing plants when a growlight spot is used from other than an overhead position. First plan the location and the lights; then select suitable plant material.

While it is important to deal with reputable growers, do not pass up the opportunity to obtain plant material from less orthodox sources. As an avid collector, I am always looking for the unusual. This hunt has become a family project and many times the children or my husband Joseph have come up with a fine addition to the collection. Hospital bazaars, church fairs, and even private plant sales are sources of material. I have made it a rule rarely to buy large and expensive plants. I prefer to grow my own in an environment where they can be expected to thrive. It goes without saying that any plant purchased or received as a gift or trade should be healthy.

Occasionally I break my own rule and buy a plant in less than perfect condition if it appears unusual. I recommend a period of isolation for all new plant material whatever the source. Prolonged neglect will often cause a plant to look sick. About eight years ago I bought a leaf cactus at a hospital fair. It wasn't for sale at the plant booth but was on a table with craft articles made by student nurses. The plant had been neglected, probably not watered for several months. I paid two dollars for it; took it home and gave it a lot of care and Peter's fertilizer. A year later I was rewarded with the most beautiful display of large pink orchid cactus type blooms. They lasted several days and were a cascade of pink for several weeks. This plant continues to be a constant source of pleasure. I have planted several hanging baskets with cuttings and have given them as gifts to friends and relatives, where they continue to be spectacular.

arrangements

The use of leaf succulent material in flower arrangements and seasonal decorations can release your creative talents. What joy to be able to pick your favorite crystal or porcelain container for an arrangement without worrying about water damage. Those lovely succulents can be cut and used without water for a week or longer without wilting. That also applies to their flowers. Their only requirement is the proper amount of light. When you have finished with the arrangement, the rosettes and cuttings can then be rooted, forming new plants. Many leaf succulents possess unusual coloring but are leggy. They will require periodic topping and re-rooting. This is particularly true of many echeverias such as *Echeveria gibbiflora* 'Metallica,' a lovely purplish-lilac, large-leafed plant.

When working with succulents in the home, be creative. Don't limit yourself to what is listed in a book or article.

photos supplied by author

Euphorbia garden in strawberry jar. Top Echeveria 'Pixie.'

The dish of succulents are cut specimens. They were arranged in the Lalique container without water. With bright light they can be used for 10 days – 2 weeks. The cuttings can then be planted and will grow into new plants.

1. *Aenoium arboreum* 'Atropurpureum'
2. *Aeonium pseudotabulaeforme* (saucer plant)
3. *Echeveria gibbiflora* 'Metallica'
4. *Graptopetalum paraguayense* (ghost plant)
5. Pachyphytum hybrid
6. *Senecio serpens* (blue chalk stick)

They are merely the stimulus to experiment and improvise. Every situation is unique. There is no completely wrong method unless you place the succulent in a dark corner sitting in a pot of water. Succulents truly grow well and they will repay your efforts a hundredfold.

Succulents for a Sunny Windowsill

Agave americana, century plant
Agave americana variegata
Agave potatorum, drunkard agave
Agave stricta, hedgehog
Agave victoriae reginae
Ceropegia woodi, rosary vine or string of hearts
Crassula argentea, jade tree
Echeveria agavoides, molded wax
Echeveria gibbiflora 'Metallica'
Echeveria 'Party Dress'
Echeveria 'Pixie'
Euphorbia caput-medusae, Medusa's head
Euphorbia milli, crown-of-thorns
Euphorbia obesa, two plants, living baseball
Euphorbia ornithopus
Euphorbia trigona, African milk tree
Kalanchoe pumila
Kalanchoe tomentosa, pussy ears
Othonna crassifolia, little pickles
Sedum adolphi, golden sedum
Sedum dasyphyllum, love and tangle
Sedum guatemalense, Christmas cheer
Sedum morganianum, burro's tail
Senecio herreianus, gooseberry kleinia
Senecio radicans, creeping berries
Senecio rowleyanus, string of beads

for more information:

If you plan to grow succulents in any but a sunny place in the house, I recommend membership in the Indoor Light Gardening Society, Philadelphia Chapter, 8813 Patton Road, Philadelphia, Pa. 19118. Monthly meetings, September to June, at the Pennsylvania Horticultural Society, 325 Walnut St./ Independence Mall, Phila.

Also, the Cactus and Succulent Society, c/o Morris Arboretum, 9414 Meadowbrook Avenue, Philadelphia, Pa. 19118. The Society meets the second Sunday at 2 P.M. at the Morris Arboretum.

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photos by Edmund B. Gilchrist, Jr.

Finding shade for greenhouse plants

ALGONKIN GARDENS

The Bottom Line is People – Not Profits

Algonkin Gardens, named after the Algonkin (not Algonquin) Indians who once roamed our 300 acres, consists of a greenhouse, a floral and plant shop, a vegetable tract, and a landscape-maintenance service. The greenhouse is too small (5,000 sq. ft.) for the 15 employees. The florist shop is too large (1,800 sq. ft.) and can't support the high rent of the shopping mall where it's located. The landscape service is based in a rural county where the limited number of potential customers prefer to pay a few bucks to the lad down the street to mow their lawns. Algonkin's payroll is much too great for the current production ouput.

None of our employees has ever attended the Ambler Campus (or any facsimile). None had spent time in a greenhouse until they did it for a salary. I'm convinced that most don't know a petunia from a dandelion. To make matters worse, the six office and accounting personnel find it impossible to type with more than one finger at a time. Last week, I walked into the potting shed in time to overhear our foreman practically begging one of the workers to "please show up for work tomorrow." (Good riddance would have been a more cost-effective approach.)

My intentions have always been to deliver a high degree of personal service and quality products. Maintaining this goal is extremely difficult with all our invented blunders. Last spring, in readiness for the coming season, we purchased an expensive tractor-mower for our lawn service division. A member of that crew drove the new tractor off the truck, neglecting to put the portable ramps in place before doing so. Axle and transmission repairs are astoundingly expensive, not to mention workmen's compensation premiums. (Oh, to return to my carefree days of sailing off the Maine coast!)

In spite of its woes, Algonkin Gardens is a unique operation. It is an integral part of a private, non-profit organization called The Bancroft Community, located about 40 miles southeast of Philadelphia, on the same 300 acres mentioned earlier. The Bancroft Community, among other services, provides vocational training for mentally retarded, emotionally disturbed, and otherwise handicapped young adults. At The Bancroft Community, we use—under the

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Last week, I walked into the potting shed in time to overhear our foreman practically begging one of the workers to "please show up for work tomorrow." (Good riddance would have been a more cost-effective approach.) 13

by Jon R. Tullis

Jim Schaefer, instructor at Bancroft and boss at Algonkin, shows John Meacham and Amy Conklin proper care for hanging baskets.

Andy Gargiulo instructs John Driscoll while preparing soil for vegetable planting. Above, Algonkin's registered Hereford cattle in background.

name of Algonkin Gardens—horticultural therapy.

Horticultural therapy simply means using plants, and their accompanying environment, as a therapeutic tool to aid in the rehabilitation of handicapped persons. It is not the treatment of sick or diseased plants as one woman visiting the '77 Flower Show misconstrued.

Now, I am not a horticulturist and just recently learned to identify a petunia myself. However, I am well aware of

Which is more important to our existence—the training and therapy of our clients or the production and sales of our plants?

and interested in rehabilitation—particularly vocational rehabilitation. It is my opinion (and some others in the field agree) that many service organizations for severely disabled persons employ archaic vocational evaluation and treatment methods. Quite often, clients or patients—let's name them Jim and Nancy—are sent to an evaluation center frequently housed in some poorly converted building. There, a "vocational evaluator" requires them to sort bolts from washers, yellow pegs from blue, or plastic spoons from forks. This evaluation is supposed to determine Jim and Nancy's strengths and weaknesses, their rate of production, and other capabilities. Invariably, these tests take place in a bland factory-like atmosphere frequently called a "workshop." Jim and Nancy, who already have emotional and intellectual handicaps, are once again reminded of their deficiencies and are not likely to produce Phi Beta Kappa results.

In contrast, however, imagine Jim and Nancy in the environment of a blooming greenhouse or an attractive floral shop where they can sort geraniums from waxed begonias, Norfolk pines from junipers, or carnations from

roses. Now the same "evaluator" and the same "Jim and Nancy" may well enjoy their encounter. As a happy consequence, it then becomes possible to reach a more accurate measure of Jim and Nancy's vocational potential.

Following these initial tests, which usually take several weeks, Jim and Nancy advance to another phase called Work Adjustment Training (WAT). During WAT, Jim and Nancy attempt to acquire healthy employment habits and attitudes, i.e., arriving at work on time, getting along with fellow workers, increasing their rate of production, and not talking back to the boss (unless s/he deserves it). WAT frequently takes place in the same environment as evaluation, but because it can last as long as six months, pleasant surroundings are even more important. Just yesterday, I was reminded of the significance of this training when a trainee remarked that she enjoys coming to work at Algonkin Gardens. In her words: "I'm needed now, the plants must be watered."

Algonkin, because of this spirit, does manage somehow to operate as a retail-wholesale plant, floral and landscape business. While not always successful, we do our best to deliver quality services and products at competitive prices. (And yes, thank you, we are open for business if you should want to order our goods.)

There are many technical terms in

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Lisa Fay arranges plants for display in floral shop

Picking peppers on the Algonkin Gardens vegetable farms.

rehabilitation (evaluation, psychological, OJT, time-study) just as there are in horticulture (propagation, landscaping, soil preparation, cross breeding); however, forget terminology for a moment and ponder the parallels between The Bancroft Community and Algonkin Gardens. The Bancroft trainee/client becomes the Algonkin employee. The Bancroft vocational evaluator/teacher becomes the Algonkin foreman. The Bancroft classroom/workshop becomes the Algonkin greenhouse and floral shop. Bolts, washers and spoons become begonias, roses and carnations. The Bancroft evaluator's score becomes the Algonkin paycheck. Which would you rather be: a Bancroft trainee or an Algonkin employee?

When we were first launched, back in the early days of 1973, the Bancroft-Algonkin professional staff struggled with the philosophical question: which is more important to our existence—the training and therapy of our clients or the production and sales of our plants? If Algonkin receives a telephone order for 2,000 hanging baskets, which must be delivered before 6:00 pm that night, who will have time to provide therapy and evaluation to Nancy and Jim? Fortunately, after a few weeks of operation and numerous heated discussions, the answer became clear to us. A busy, well-organized greenhouse helped Nancy and Jim increase their productivity, stimulated their enthusiasm, and even prompted them to return to work quickly after coffee breaks. So which comes first, the person or the plant? Either way, they do make a beautiful marriage—called horticultural therapy.

Horticultural therapy at The Bancroft Community is used primarily for vocational rehabilitation. One should, however, be aware that numerous psychiatric hospitals, nursing homes, retirement communities and veterans administration hospitals (many right here in the Delaware Valley) use horticultural therapy in other types of rehabilitation. There is now a national organization, The National Council for Therapy and Rehabilitation through Horticulture (NCTRH) with headquarters at The American Horticultural Society in Mount Vernon. Horticultural therapists are now being trained in several four- and two-year university programs at institutions which include The Menninger Foundation, Topeka, Kansas, and The Ambler Campus, Temple University. For more information about these programs, you can write NCTRH, Mount Vernon, Va. 22121.

As I write this manuscript [in July], my neighbor, in Haddonfield, an accountant by profession, can be seen on his hands and knees attending to his English ivy, rose bushes, and geraniums. He spends many hours in that position and so must enjoy it. Whether he realizes it or not, my neighbor is benefiting from horticultural therapy. Indirectly, so are all of us who live near and pass by his garden. The roses are exquisite this time of year and certainly cause all observers to forget their immediate worries, at least momentarily. Next time you putter with your petunias or rewire your bonsai, recognize that gentle, calming feeling—horticultural therapy!

Jon Tullis is director of The Bancroft Community, a residential-vocational training center for handicapped young adults, near Mullica Hill, N.J. Following a biological sciences education at Purdue University, Tullis joined The Bancroft School, Haddonfield, N.J., the Community's parent organization. An admitted non-horticulturist, Tullis helped with the planning and implementation of horticultural therapy at Bancroft and was a charter board member of The National Council for Therapy and Rehabilitation through Horticulture, Mount Vernon, Va.

Hardy Waterlilies:

AN EASY PERENNIAL FOR YOUR GARDEN

17

photos supplied by author

Nymphaea hybrid 'Sunrise'

by Sally McKeehen

Sally McKeehan is a senior at Penn State University majoring in ornamental horticulture. This past summer she participated in the Longwood Gardens Summer Laboratory and chose to write the required paper on hardy waterlilies. She has worked at the Philadelphia Flower & Garden Show and the Scott Horticultural Foundation in Swarthmore.

The waterlily, genus *Nymphaea,* is a cosmopolitan aquatic herb valued for its showy waxen petals, natural radial growth and graceful habit. Through history an emblem of purity and truth, the waterlily is considered the most beautiful of aquatic plants.

The genus is divided into two groups: hardy waterlilies or tropical waterlilies. The hardy types are actually perennials since they will live in the pool over winter, then grow vigorously and bloom freely during the summer. By comparison, the tropical types must either be replaced each year or carried over through the winter dormancy in greenhouses. By general appearance, the flowers and leaves of hardy lilies are usually floating and the group consists of only day-bloomers (opening in the morning and then closing at dusk). The tropical group is classified into day-bloomers or night-bloomers (opening in evening and closing in the morning) of more delicate tones. The leaves of tropical waterlilies float, but the flowers are thrust above the water on strong pedicels.

This fascinating type of gardening is essentially easy for anyone, and it's surprisingly effective on a small scale. The hardy nymphaea are inexpensive, permanent and quite simple to maintain.

A wide variety of colors are available, with the exception of blue. Through hybridization, mainly between crosses of *Nymphaea odorata* and *N. alba,* numerous cultivars in shades of red, pink, yellow and white have originated. Of course, certain cultivars rate better than others for use in our gardens. The hardy cultivars best suited for home culture are listed in the box on page 21

Now with a general understanding

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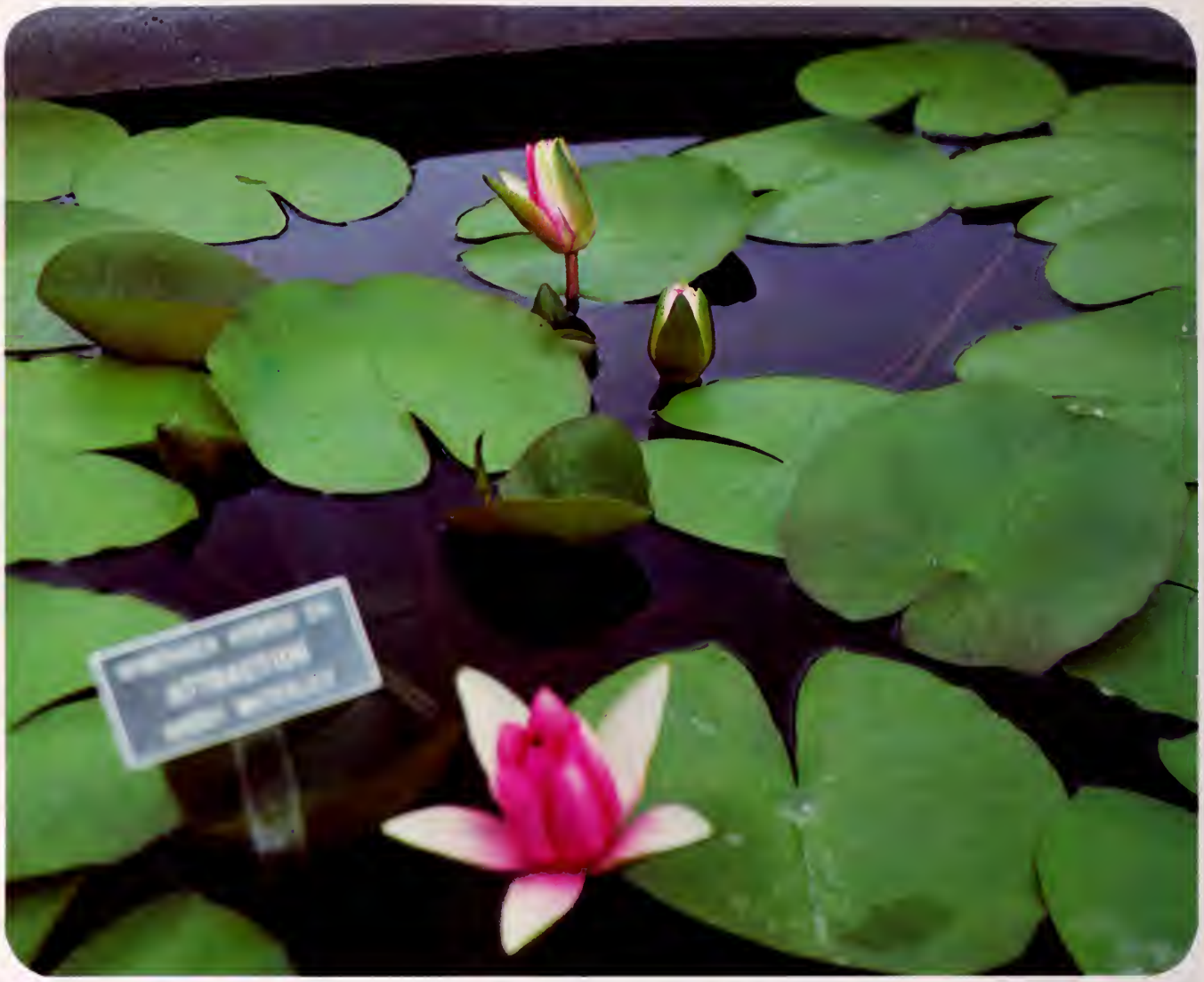
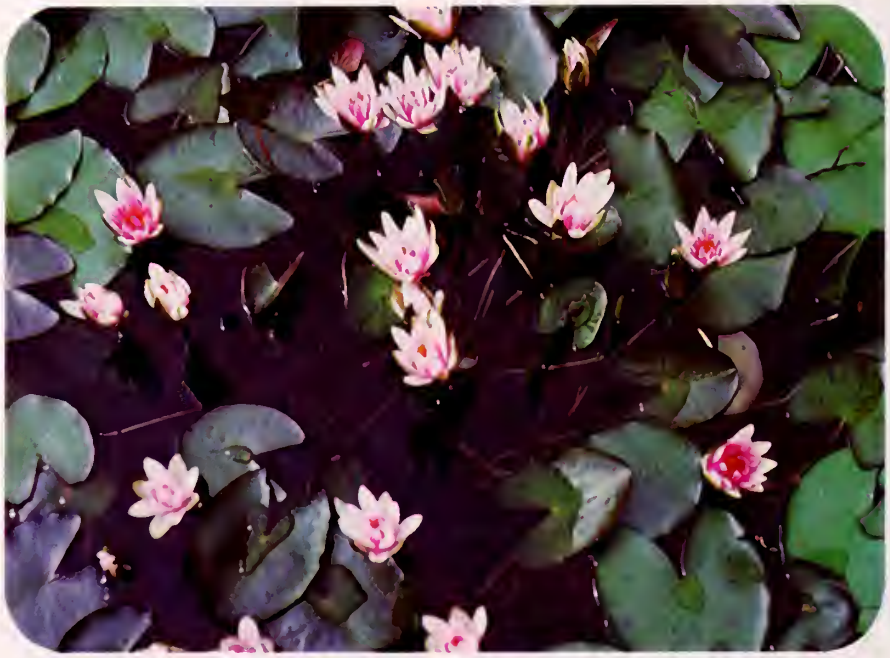


Nymphaea hybrid 'Attraction'

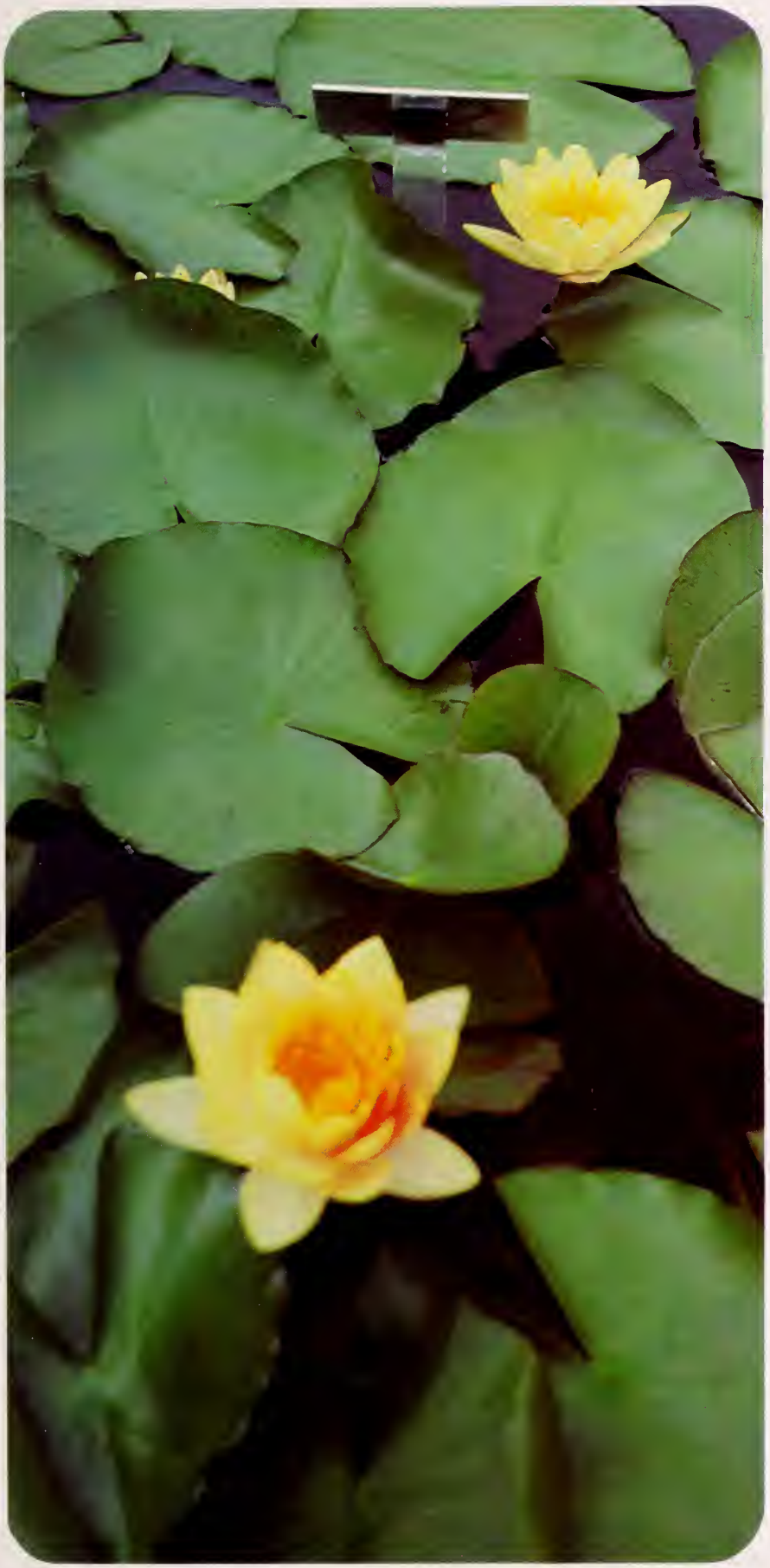


Close-up of pygmy *Nymphaea* 'Joanne Pring'

of the plant, it's time to enjoy growing waterlilies as a perennial for your garden.

Choose the varieties you find most appealing. Three good purchasing sources are Slocum Water Gardens (1101 Cypress Garden Rd., Winter Haven, Fla. 33880), William Tricker, Inc. (74 Allendale Ave., Saddle River, N.J. 07458) and Three Springs Fisheries (Lilypons, Md. 21717). The catalog prices range from $6 to $8 per plant.

The primary considerations in adapting waterlilies to your home are the pool and its location. Waterlilies require full sun, unless a cultivar is specified as tolerating part shade. At least four hours of sunlight are actually required but six to eight hours are better. The rootstock of a waterlily must be submerged but only to a pool depth of 18 in., with 10 to 12 in. of water above the crown of the plant. The pygmies



Nymphaea hybrid 'Comanche'

only need a few inches of water above their crowns. Depth is significant since waterlilies are particularly partial to warmth and bloom more freely if the depth is on the shallow rather than the deep side.

simple or complex

Creating a pool for waterlilies can be simple or complex. Simple ideas for home use range from a watertight barrel such as half of a whiskey barrel set out on a patio to tubs sunk into the ground, for example, a zinc tub or discarded bathtub. For a more elaborate pool constructed of concrete or to adapt waterlilies to a natural pond, good reference books are *Goldfish Pools, Waterlilies, and Tropical Fish* (TFH Pubs.) or *Garden Pools, Waterlilies, and Goldfish* (Van Nostrand, 1958), both by Dr. G. L. Thomas, Jr., of Three Springs Fisheries.

The size of the pool can be as small as two square feet. This much water surface in a sunny location is an attractive addition to a patio or small garden. Just cut a whiskey barrel to one foot and either set it on a patio or sink it into the soil leaving an inch or so extending above the ground level to keep out surface water. Then plant with a pygmy waterlily and enjoy delicate blooms all summer long.

To plant, the proper soil is required. The best media for growing waterlilies is actually a turfy loam which could be soil from a pasture or from your own yard. Just avoid leaf soil, peat or silt. Remove grass and other organic matter because it will float to the top of the water when in the pool. Many books on waterlilies suggest that three parts loam and one part partially rotted cow manure (analysis 2-1-2) with ½ lb. bonemeal added for each bushel of soil makes a good growing media. But according to Bill Pierson, in charge of an outstand-

continued

Pygmy *Nymphaea* 'Joanne Pring'

ing collection of waterlilies at Longwood Gardens, a simpler mix is quite adequate. He suggests a loamy soil combined with a regular lawn fertilizer (analysis 10-6-4) at the rate of one bushel soil to 1½ lbs. of fertilizer. A bushel of soil would be adequate for growing a waterlily in a tub. Apply the fertilizer only at the base of the barrel or tub and add the soil on top. Fertilizer would leach from the soil if placed in the upper portion. Then, fine gravel or sand should be placed on top of the soil to keep the water clear. Once the soil is ready and placed in the pool, add the water to the container before planting. Just fill the container with water now, and only replace what is lost by evaporation throughout the summer. A constant supply of running water is not necessary; in fact, still water produces the most luxuriant growth for waterlilies. This would also be a wise time to decide if you want fish as an additional attraction to your pool. The fish will devour mosquito larvae and wrigglers and are especially entertaining and practical in medium to large size pools.

Once the plants are underway in the pool, it's important to realize that algae growth will develop. This algae is not harmful to the plants but can become unattractive. For control before planting, copper sulfate can be used if no fish are in the pool. Or, for a small pool

or one already stocked with fish, permanganate of potash is a safer means of control, but its effect is not as long-lasting. One teaspoon of a saturated solution to a gallon of water is effective. It can also be used during the season, but it may harm young fish.

planting

When you are ready to plant, set the container out on a patio or sink it into the ground and fill with approximately 5 in. of the soil and fertilizer mix in addition to about 12 in. of water. To plant hardy nymphaea for the summer blooming season, the water in the pool must be warm enough for them to start into new growth immediately. That will usually be in early May. The plant is then taken from the pot, which has been immersed in water up to planting time, and placed in a hole dug in the soil large enough for the root ball. After planting, rearrange the gravel layer to cover the soil surface and keep the water clear. Within a short time, perhaps one week, the submerged leaves will extend their petioles to attain a surface floating position. Strong plants will begin flowering in about one week and will continue until cold weather.

The nymphaea require a small amount of maintenance compared to other perennials. Throughout the summer, surplus foliage and old inflorescences should be removed by taking them off close to the roots. Other than this periodic pruning, the waterlilies require no weeding or cultivation and there is hardly a worry about watering. The fact that they are maintenance-free might add to your pleasure.

It's easy to see that a small tub or barrel will house a single pygmy nymphaea comfortably, but how many plants should be used in larger pools? To answer that, use the following guideline: a circular pool 10 ft. in diameter will house three plants. Then, to keep the water pure and clean, six fish and four snails would be sufficient. On this basis, you can figure how many plants to use depending on the size of your pool.

Since nymphaea are hardy plants, you can enjoy them from year to year. In order to overwinter the plants, the roots and underground stems (rhizomes) must not freeze. Remove all top growth after the blooming period. Then, a small pool can be drained and filled with leaves to keep the plants above freezing temperatures. Or if the roots are planted in boxes, the boxes can be covered with moist peat moss, leaves or burlap and stored in a cool basement until spring. A larger pool could be protected by placing a log in the water to absorb ice expansion, or the pool could be covered with boards and leaves.

Nymphaea can be propagated by dividing the rhizome. Actually, you should divide every three to four years in May and reset the new plants in fresh soil. Just lift the plant from the soil, wash free of mud and cut with a sharp knife. Separate the rhizome with an axillary bud to each segment, much like the "eye" of a potato. Each segment should have some of the rhizome attached and the roots cut off. To successfully root these "eyes," plant firmly in small pots with a minimum of soil, and submerge in water of 60° to 65°F. These extra plants will add to your collection.

The hardy types are actually perennials since they will live in the pool over winter, then grow vigorously and bloom freely during the summer.

The popularity of waterlilies actually began in 1786 when the fragrant white *Nymphaea odorata* was introduced in England. Hybridization began in 1850, and from 1885 to 1890 a Frenchman named Latour Marliac of Temple-sur-lot drew the attention of flower lovers everywhere with his magnificent hybrids of hardy nymphaea. Probably no one else has done so much for waterlily culture. Now today, the waterlily pool forms a "sanctuary in any garden where one can forget the tensions of life and find relaxation."

cultivars suited for home culture

'Attraction'— This hybrid has exceptionally large flowers for a hardy, up to 10 in. across. The color is garnet to dark red with yellow tipped stamens. Quite a popular variety.

'Escarboucle'—This lily grows prolifically and bears large, brilliant red flowers with garnet stamens and star-shaped petals.

'Gonnere'—A superb glistening white double flowered hybrid. Flowers are cup-shaped and the plant blooms all summer long.

'Marliac albida'—Fragrant white flowers and yellow stamens with characteristic sepals flushed pink. Plant in continuous bloom. One of the best whites in cultivation for all purposes.

'Marliac rosea'—A companion to 'Marliac albida' and still one of the best with deep pink flowers.

'Rose Arey'—Star-shaped flowers of bright pink with pointed incurved petals. Has the added advantage of fragrance.

'Pink Sensation'—A fragrant and free-blooming lily with solid color. Early to open and late to close during the day.

'Sunrise'—The finest of yellow hardy waterlilies because of its rich butter-yellow, star-shaped blooms. This hardy rivals the finest of tropical sorts.

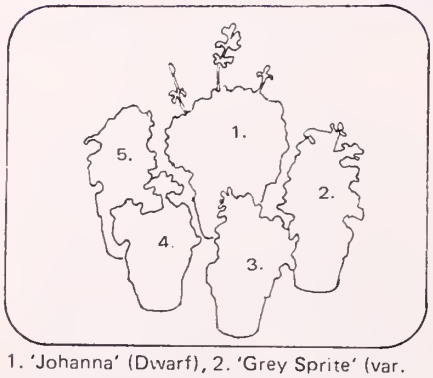
'Chromatella'—Known as a changeable or sunset shade, due to the changes in flower color with maturity. This one is rosy pink with soft yellow overtones and turns to a coppery bronze as the flower matures. It's a dependable bloomer and can tolerate a little shade.

'Paul Hariot'—Also known as a changeable. The cup-shaped flowers begin as canary yellow, then gradually turn pink as the bloom matures.

'Helvola'—Actually a miniature or pygmy waterlily, which is a delightful novelty to grow in a watertight tub on a patio or as an accent to a small pool. 'Helvola' has bright yellow blooms continuously.

'Joanne Pring'—Also a pygmy waterlily but with continuous deep pink blooms.

Pinks



1. 'Johanna' (Dwarf), 2. 'Grey Sprite' (var. foliage), 3. 'Green Gold' (var. foliage), 4. 'Mr. Evaratts,' 5. 'Sneezy.'

miniature and dwarf geraniums

photos by Edmund B. Gilchrist, Jr.

Reds

1. 'Friesdorf,' 2. 'Fleurette,' 3. 'Pride,' 4. 'Alpha,' 5. 'Altair.'

by Doris M. Kaufman

Doris Kaufman has been interested in plants since she began to read and write. She has a greenhouse that was set up when the windowsills in her house began to overflow. Her favorites, of course, are geraniums, followed by African violets, sedums, succulents and ferns.

While expanding my interest in growing and collecting geraniums, I have succumbed to the miniature and dwarf varieties, which fascinate me.

Miniature and dwarf geraniums, hybrids of *Pelargonium hortorum*, have the beauty and color and resemble full-sized geranium plants, except for their size. The leaves are smaller, they have short internodes, compact growth and beautiful flowers.

continued

Because they are compact they require practically no pinching or pruning, making them ideal plants for sunny windowsills and window greenhouses.

If you have favorable growing conditions for geraniums, it is possible to fit many more miniature and dwarf varieties in the same amount of space used for standard sized plants. They can also be successfully grown in the same 2½- to 4-in. pot for several years, which is a plus factor.

Miniatures and dwarfs require more watering and fertilizing but I find them worth the effort. Many will bloom almost year-round providing constant color. Many have larger blooms than you would expect on such diminutive plants and many flowers are beautifully shaded, two-toned or have distinctive "eyes" of contrasting color.

I find the culture of miniatures and dwarfs similar to standard varieties, except for watering and fertilizing.

temperature

They do best with a temperature between 55° and 70°, with a 10° drop at night. My greenhouse night temperature is 55°. During last winter's prolonged cold spell when we had heater problems, the temperature went as low as 35° and the geraniums held up very well. The foliage did acquire a crispness and reddish color. I have found they do much better in the cooler weather.

When grown as house plants, a sunny window, southern exposure in winter and east or west for the balance of the year, is best and a cool room is preferable. Avoid windowsills with heat underneath or foliage will turn dry, yellowish or brownish, even if pebble trays are used.

soil

There are many potting soils and mixes on the market, or you can mix your own. I have had success with three parts Pro-Mix BX, a sterile mixture, and one part of coarse builder's sand. The sand aerates the growing medium and allows the roots to breathe. Using soil that is too rich or has too much nitrogen produces excess foliage and little or no bloom.

Miniatures and dwarfs can be grown in the same pot and soil for several years. After a year, however, in the same pot or container, new growth can be stimulated by pruning back some of the top growth, removing some of the old soil and trimming the root system and repotting in fresh soil. Any pieces of the top trimmings over one inch in size that are not too woody or too soft can be rooted for new young plants.

water

Miniatures and dwarfs are grown in pots ranging from 2½ to 4 in. and, therefore, need to be watered more frequently and more carefully.

Clay pots naturally need more frequent watering than plastic or glazed pots and the smaller the pot the more frequently watering is necessary.

Initially, I grew plants in clay pots but have changed almost exclusively to plastic. For a while I used 2½- in. pots but have now gone to 3-in. pots, except for the very tiny plants. As you work with your plants you get to know how often and how much to water.

We catch rain water in large drums, which I use on the geraniums except in cold weather. I think rain or well water is better than chlorinated water.

Avoid wetting the foliage when watering. The foliage is small and compact and unnecessary wetting can cause rotting.

Lower leaves may yellow and fall off if the soil is too dry or too wet, or if the plants are too close and have poor air circulation.

Water plants thoroughly before fertilizing. I use a very dilute solution of Peter's 15-30-15 about twice a month, usually the first and fifteenth. Avoid high nitrogen fertilizers as miniatures should not be over-fertilized if we want to keep them small. If, however, leaves tend to be yellow-green or are dropping off, they may need more fertilizer.

propagation

Use only healthy plants for propagation and be sure the soil is moist on plants to be used for cuttings. Dry, limp plants produce inferior cuttings and they may not make it at all.

Tip cuttings of half-ripened growth an inch or longer (not too green and not too woody) should be cut with a sharp knife or razor blade, leaving no

jagged edges to rot. Remove all leaves and stipules, except a few at the top of the cutting. Place cuttings in individual 2½- in. pots of moist horticultural perlite or your regular growing medium. Keep moist, but not too wet, and keep out of the sun for a few days. Keep a close check on your cuttings. If they remain upright and firm they are all right and should root in good time.

I have also used Jiffy 7's for rooting cuttings successfully. Keep a constant check to make sure they are not too wet or too dry. I have found it advantageous to remove gently the mesh coating of the Jiffy 7 before potting into growing medium.

Sanitation is important with miniatures and dwarfs because of their compactness. Remove faded flowers including the stems and discolored leaves to prevent rotting, and your plants will be more vigorous and disease free. Any unhealthy plants should be removed and discarded if in bad condition. Do not use the pots again until they have been cleaned and sterilized.

Isolate new plants until you are sure they are healthy before adding them to your collection.

summer care

I have found the hot, humid summer weather the most difficult time to care for the miniatures and dwarfs. In previous years I have put them in trays with bottom drainage holes, and raised the trays on bricks at each corner and placed them on tables outside in semi-shaded areas. I have also tried sinking the pots (clay) in the soil and have had serious losses both ways from excess water and rains. Last year and this summer I have them under cover in screened areas, well-spaced for good air circulation and have had better results.

That may sound like too much trouble for a few small plants, but if you really love them and enjoy them it is all worth while.

My first miniature was 'Kleiner Liebling' or 'Little Darling,' a free-blooming, single bright pink flower with a white "eye" and small zoneless leaves. I found it a delightful, cheerful plant that didn't take up much room, and I am sure it was probably partly responsible for my increasing interest in miniatures and dwarfs.

'Green Gold,' a sport of 'Kleiner Liebling,' has foliage of dark green center and gold edges and the same bright pink flowers and is one of my favorites. There is also a variegated green and white leaf 'Kleiner Liebling.'

I am fond of variegated foliage so 'Grey Sprite,' with white bordered green leaves and single, salmon-pink flowers is another favorite. In cold weather the white edges take on a pinkish cast making it more beautiful.

'Playmate' has unusual tiny three-lobed leaves and narrow petaled salmon flowers. In this variety the foliage and flower are different than the more common geranium.

Most miniatures stay under 6 in. and are easy to maintain. Some in my collection are 'Jaunty,' 'Pixie,' 'Altair,' 'Caligula,' 'Merope,' 'Tu-Tone,' 'Sprite.'

Dwarfs are usually between 6 and 10 in. These can get out of bounds and are usually grown in 3- or 4-in. pots. Some of these are 'Flirt,' 'Pride,' 'Gypsy Gem' and 'Robin Hood.'

There are other miniature pelargoniums available, the most common being *Pelargonium peltatum,* or ivy geraniums. The ones I know and grow are 'Sugar Baby,' a bright pink, and the smaller 'Gay Baby' with pale mauve flowers.

Pelargonium domesticum, regal or Martha Washington types that look like pansies and bloom mostly in the spring, has some miniatures but they are mostly grown in England. 'Mme Layal' and 'Baby Snooks' are two I am familiar with. However, the regals do not flower as frequently as zonals (the more common geraniums) and must have a very cold winter temperature to set buds. They are also more subject to white fly, which none of us need.

Pelargonium x *limoneum* and 'Prince Rupert' are two miniature lemon scented geraniums that are worth adding to any collection.

Even if you do not plan to collect miniature or dwarf geraniums, or have been avoiding them because you think they may be difficult, one or two in your cool, sunny window garden would add interest and color. You will find them charming, fascinating and most rewarding and well worthy of your few extra minutes of time.

●

HORTICULTURAL CAREERS:

entering at the ground floor

by Ann Bagley

Ann Bagley is the executive secretary of the Campus Arboretum Association of Haverford College. A Simmons College graduate, she added three years of training at the Barnes Foundation Arboretum. She now works full time in the field of horticulture.

1.

photos by author

2.

Horticulture as a career or a hobby can begin in unexpected ways. One initiation is often via the summer job. Yet it is a fairly remote beginning because the aim of the summer worker (and most part-time student workers during the school year) is simply to earn money. In some cases, however, the temporary work is the beginning of a lifetime in horticulture, either professionally or as a hobby.

Students at Haverford College with majors as far removed from horticulture as economics, English literature, religion, government and classics band together to work with the grounds crew, "learning by doing" the value of working with the soil. With this initiation to gardening some students eventually turn to the natural sciences; some redirect their careers to horticulture; some develop a lifetime hobby and some simply go back to the books with a good suntan and better muscle tone.

"I'm working my way through college" is not an easy task these days. At Haverford, a small, private college on the Maine Line, groundskeeping is one of the areas of work on the campus students may choose during the school year and, more recently, during the summer. Groundskeeping jobs are eagerly sought, and since fewer jobs are open in this department than in some other areas, the competition is keen for the openings early in the school year. The jobs are given on a first come, first served basis with students needing financial aid and "old, experienced" helpers getting first privilege.

There's a lot to do on a 216-acre campus. About 10 students are scheduled for grounds work during the school year and every helping hand is welcome. (Over 300 of the 850 students at Haverford work in some capacity or other on the campus.) Each fall, after signing up for the crew, the students work out their academic schedule, including sports program. Then they know how much time they can devote to groundskeeping, and the work begins. Most students try to devote 10 hours a week to their grounds jobs. This schedule would provide approximately $600 income per year for their use against the bills.

At Haverford, in all jobs, preference is always given to students on the Financial Aid Program for the first two weeks of school. After that time, any student who wants to work may apply for any campus job not yet taken. Although a student may choose to work in the library, dining rooms, labs or offices, grounds work is a strong favorite because it provides outdoor work and exercise—both lacking in the academic schedule. Working along with the regular grounds crew and depending upon the season, the students rake, pull weeds, chop brush, shovel snow, dig holes, plant shrubs and fix fences—a vigorous workout.

The earliest histories of Haverford College, founded in 1833 by the Society of Friends, tell of students involved in gardening on a tightly controlled schedule. Back in 1833 the students rose at 5:30 am during the summer sessions to prepare for a 7 am breakfast—after which a half hour was "to be spent in horticultural labor under the direction of the Superintendent." This labor was considered necessary pleasant recreation and a later history mentions that the work on the flower beds kept the boys "from coarse and vicious pleasures." Another tradition thriving today is the use of house plants

continued

1. Students dig azaleas in nursery.
2. Bryn Mawr student Debra Cline cares for plants in lath house.
3. Placing the azaleas in permanent beds.

in the dorm rooms. Greenery is present in every dorm, a continuation of a practice mentioned in the 1860's. Today's student, however, is apt to specialize in cactus, bromeliads or orchids.

While the grounds work shapes up the students physically, refreshes them mentally and provides needed dollars, the work also provides the College with the needed laborers to do the little extra jobs that are difficult for the regular groundsworkers to do with their limited staff. The College is aware of the value of this group of workers who are able to contribute hours to a work program on an irregular schedule far more easily than most people.

Even the most menial jobs are undertaken by the students with a positive attitude because of the beneficial exercise built into the job. (Exception: ice chipping this past winter was voted the job topping the hate list.) As a relief from pressure, weeding or raking leaves can be satisfying. Tensions drop away as the leaf piles grow. Another satisfaction from the groundskeeping jobs that seem to please the students is you can see what you've done at the end of two hours. A student observes "The whole azalea bed is weeded and looks great, while working in some office somewhere doesn't give me the same feeling of satisfaction. Chopping wood, weeding or planting shrubs is so *visible*."

Some students come to this work with no knowledge of the soil, plants, or which end of the trowel is the handle. They soon learn how to use the tools, handle large root balls, dig a proper hole and stake a tree. To a person brought up in the city, it is a whole new world. Quite often, the student continues with horticulture because the experience is so rewarding. There are, however, some students who have worked for many years on their family's grounds, and even some who have had greenhouse experience. The students enjoy working together with the regular grounds crew and learn from them more than just the technical aspects of groundskeeping. They learn a lot about team spirit and come to appreciate all the effort needed to keep a campus operating and beautiful.

It is only in recent years that the College has hired a student summer crew. This team fills the void left when the regular staff is vacationing, and helps get done the jobs that are difficult to fit into a regular schedule. This summer the crew, three Haverford students and one Bryn Mawr student, established azalea beds (the College propagates many of its own shrubs for use on campus), cleaned and rearranged the greenhouse plant materials, weeded the shrub and flower beds around the campus buildings, pruned shrubs damaged by winter wind and did general nursery maintenance work. The summer students have more opportunity to see a job completed than during the academic session. The part-time worker during the school year is usually put onto a task already in progress and he leaves before it's finished to go to class. For that student, satisfaction comes more from the fresh air and exercise, whereas the full-time summer worker is given the opportunity to set up the job, choose tools, redirect the activity if the method needs to be changed and to stay with the task to the end. Although the students are assigned general maintenance jobs most of the time, there are some jobs that require special skills. Then, on-the-job-training comes from the supervisor and the landscape architect or grounds foreman. Two summers ago, two students built a flagstone terrace. That meant the team had to learn how to follow the landscape architect's plan, dig out the area for the terrace, mix their own concrete and lay the stone properly. The terrace is now a well-used resting place on campus and to the two students, now graduates, it is a skill to be added to the training in pruning, planting, following a planting plan, all excellent skills that will probably always be useful.

. . . the work on the flower beds kept the boys "from coarse and vicious pleasures."

From the inception of the student groundskeeping program women have participated. Every year there has been a female worker on the crew, and each year the woman involved has let it be known that she wants to be included in all projects. And there are some strange reactions from visitors to the campus who look twice at a young woman driving by in a tractor. Obviously, some education is still needed so the general public will not think any of the students are being exploited in any way. The flagstone terrace, mentioned previously, was built by one male and one female worker with no thought about the job being too difficult for either one. She enjoyed the work and laughed at the many comments sent her way from men who seemed uncomfortable seeing women lug around heavy flagstones or mixing cement. Perhaps there is another group, then, to add to those already benefiting from the student work program: the general public —learning about how the dedicated, hard-working students help put themselves through college.

Weeding the nursery.

Two Outdoorsmen

Two Haverford graduates are working locally as horticulturists. Groundskeeping was not available to these young men but would have appealed to them as they both sought outdoor jobs off campus. Chris Scott, Class of '71, specializes in tree surgery and landscape design. His major at Haverford was classics and, for awhile after graduation, he taught school. He is now in business for himself, working out of Ardmore. He calls himself a tree doctor, doing mostly tree pruning and removal as well as landscape design. His interest in trees began at Haverford. Since there were no grounds jobs on campus at that time, he looked in the Yellow Pages to find a landscaping service or tree surgeon who might be interested in a part-time worker. He found a job. From that beginning he went on to work for two other tree pruning companies in the area. He loved the work because the job afforded him time to think, as well as providing fresh air and exercise. As a teacher, after graduation, he missed these benefits so he created his own company. He is now outdoors all the time.

Bill Bedrossian, class of '75, majored in biology, a more likely beginning for a tree worker. He channeled into nitrogen fixing as a specialty. While at Haverford, he earned money working for a landscaping firm in the area. He now has his own business doing tree work and landscape maintenance. In addition, with his portable saw mill, he can transform a felled tree into usable boards. The Alaskan saw mill adds an unusual dimension to the services he provides his customers. Bill works out of Havertown, site of his original landscaping experience. Both entrepreneurs say they would have liked having the campus grounds work while at Haverford.

Hortus Third: A Concise Dictionary of

BOMBACACEAE **A,** *Ceiba pentandra* **Aa,** fruiting branch, × 1/6, **Ab,** flowering branch, × 1/8, **Ac,** flower, × 1/2, **Ad,** stigma, × 8, **Ae,** segment of ovary, cross section, × 2, **Af,** dehiscing fruit, × 1/4. **Ag,** seed, × 1. **B,** *Pseudobombax ellipticum* **Ba,** flower, × 1/4, **Bb,** base of flower, vertical section, × 1/2 **C,** *Ochroma pyramidale* **Ca,** flower, × 1/4, **Cb,** apex of staminal tube, with spiralled anthers and protruding stigma, × 1/2

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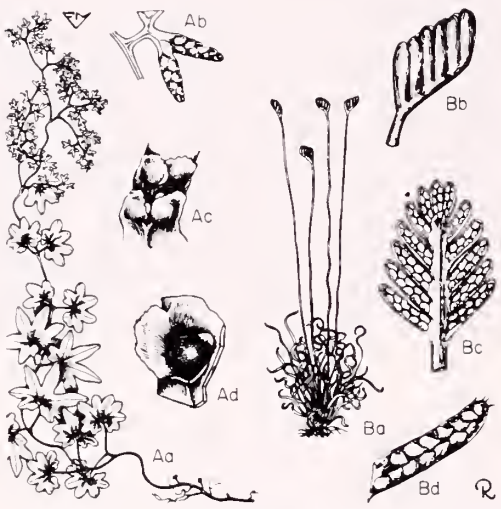


SCHIZAEACEAE **A,** *Lygodium palmatum* **Aa,** plant with sterile (below) and fertile (above) pinnae, × 1/4, **Ab,** fertile lobes, × 2; **Ac,** sporangia covered by indusia, × 5; **Ad,** sporangium with indusium cut and opened back, × 10. **B,** *Schizaea pusilla.* **Ba,** plant, × 1/2; **Bb,** blade of fertile leaf, × 3; **Bc,** blade of fertile leaf, expanded, × 3; **Bd,** fertile lobe, × 6. (Aa-Ad from Bailey, *Manual of Cultivated Plants,* ed. 2.)

John M. Fogg, Jr., taught botany at the University of Pennsylvania for more than 40 years. He joined the staff of the University's Morris Arboretum in 1932 and was its director from 1954 to 1966. He is at present director of the Arboretum of the Barnes Foundation in Merion, Pa.

Although many books, upon their publication, have been heralded as "long awaited," that cliché was never applied with greater validity than to *Hortus Third. Hortus Third* finally appeared 36 years after its predecessor, *Hortus Second.*

The present volume is the product of dedicated effort and research on the part of the members of the staff of the Liberty Hyde Bailey Hortorium at Cornell University.

There are many reasons to account for the 36-year delay in the completion of this work. [Ed. note: anticipated delay was 10 years.] Chief among them is its far broader coverage compared to that of the second edition. *Hortus Third* runs 1,344 pages, and contains approximately 24,000 descriptions of families, genera, species and varieties of plants cultivated in America, north of Mexico. Since Puerto Rico and Hawaii are also included, it means that hundreds of tropical and sub-tropical plants have been added. In addition countless cultivars have been added, a practice not in vogue when *Hortus Second* was being prepared.

An attractive feature of *Hortus Third* is the inclusion of 260 line drawings depicting the characters of the foliage, flower and fruit of many important families and genera. Information concerning propagation and cultivation will be of great value to the practical gardener, as well as a comprehensive glossary of botanical terms included at the end. Unlike *Hortus Second,* this volume gives the authorities for each genus and species and an alphabetical list of all of the authors concerned is appended.

Thus, the name of our eastern hemlock appears as *Tsuga canadensis* (L.) Carr. That means that Linnaeus gave it the specific name *canadensis,* although he placed it in the genus *Pinus,* and it was Carrière who transferred it to the genus *Tsuga.* These citations therefore embody information of bibliographic value.

For those few remaining botanists who believe that specific names should be capitalized when they are either personal commemoratives or genetic epithets it is gratifying to find this principal adhered to in the present volume. Years ago L. H. Bailey, the father of *Hortus,* said that such a practice is "not only essential to truth but to the dignity and significance of language." In addition, it may be pointed out that the capitalization of personal specific names often conveys information of geographic or historic importance. For example, any species labeled *Bungeana (Pinus Bungeana, Euonymus Bungeana,* etc.) must have come from China, since that is where Alexander von Bunge traveled and collected. Or a plant named *Massoniana* may safely be assumed to be a native of South Africa, where Francis Masson spent 10 years exploring and collecting.

Generic names applied at the specific level are nouns, not adjectives, and therefore a failure to capitalize them may lead to confusion. Thus in the case of our common eastern white pine, *Pinus Strobus,* the specific name is that of a pre-Linnaean genus of conifers. Decapitalizing it makes it look like an adjective and since most trees are feminine all that remains now is for someone to insist that the specific name should be *stroba* instead of *strobus.* Thus by decapitation, as Bailey later called it, the basic historical significance of a name is obscured.

Although this practice has been largely abandoned by present-day writers, there are many examples in our literature of generic names which have been applied at the specific level, e.g., *Picea Abies, Myrica Gale, Diospyros Lotus, Fraxinus Ornus, Liriodendron Tulipifera, Dodecatheon Meadia,* and so on. It is pleasing to note that *Hortus Third* has resisted the current trend and has continued to spell those names with capital initials.

In a work of such stupendous proportions it is to be expected that there will be a meager sprinkling of errors, omissions or misinterpretations. One looks in vain for a description of *Hydrangea arborescens* 'Anabelle,'

*Published by Macmillan Publishing Co., New York, 1976 ($99.50).

Plants Cultivated in the United States and Canada

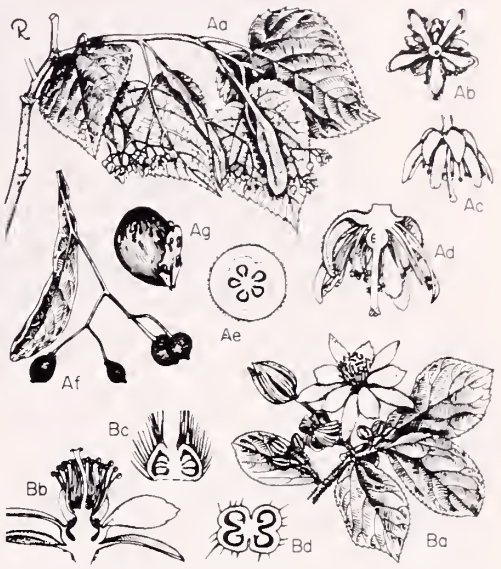
by John M. Fogg, Jr.

although this handsome shrub has achieved wide acclaim since Joe McDaniel introduced it in 1960. *Schlumbergera* x *Buckleyi* is the approved combination for the popular succulent here called *S. Bridgesii.* If the pink-bracted American dogwood is really derived, as many believe from one or more native populations, then its correct name is *Cornus florida* forma *rubra,* and not *C. florida* 'Rubra,' which implies that it is a cultivar unknown in the wild state.

These are, however, minor flaws in a work of such inestimable value that no botanical garden or library, no arboretum, no competent nurseryman can afford to be without it.

Its great contribution to horticultural literature resides in the fact that it contains descriptions and the correct botanical names and countries of origin and botanical characteristics of thousands of species of trees, shrubs, vines, and herbaceous plants that are in cultivation throughout the temperate areas of the Northern Hemisphere.

Indeed every serious gardener might do well to begin dropping coins into his or her piggy bank until s/he has accumulated the sum of nearly $100, which is the price of this sumptuous volume. It is worth every penny of it!



TILIACEAE. **A,** *Tilia americana.* **Aa,** flowering branch, × ½; **Ab,** flower, face view, × 1; **Ac,** flower, side view, × 1; **Ad,** flower, vertical section, × 1½; **Ae,** ovary, cross section, × 5; **Af,** fruit, × ½; **Ag,** seed, × 2½. **B,** *Grewia tiliifolia.* **Ba,** flowering branch, × ½, **Bb,** flower, vertical section, × ¾; **Bc,** ovary, vertical section, × 5; **Bd,** ovary, cross section, × 6.

NYCTAGINACEAE. **A,** *Mirabilis Jalapa.* **Aa,** flowering branch, × ⅛, **Ab,** flower, face view, × ½; **Ac,** flower, side view, × ½; **Ad,** flower, vertical section, × ½; **Ae,** base of flower, vertical section, × 3; **Af,** ovary surrounded by gland and stamen bases, × 3; **Ag,** fruiting calyx, × ¾, **Ah,** achene, × 1. **B,** *Bougainvillea spectabilis;* **Ba,** flowering twig, × ½; **Bb,** flower and subtending bract, × 1, **Bc,** flower and bract, vertical section, × 1. (**Ba-Bc** from Bailey, *Manual of Cultivated Plants,* ed. 2.)

photos from *Hortus Third*

hortus third acknowledges house plant explosion and role of plant societies

Walter H. Hodge, a systematic botanist, was senior research associate during the final editing of *Hortus Third.* We've excerpted below a section of an article that he wrote for the November 28 *New York Times.* We think his concluding observations acknowledge succinctly the role amateurs and their organizations have played in transforming horticulture in the last 50 years or so.

"The greatly increased size of *Hortus Third* reflects not only the 36-year period that has elapsed between the editions but also the dynamic increase in interest in gardening and horticulture during the same space of time. This has in turn fostered interest in a far greater variety of cultivated plants.

"As a simple example, consider representative house plants of today and yesteryear. It is hard to believe that the African violet, perhaps the single most popular house plant today, was virtually unknown in homes when the first edition appeared. Back in the 1920's, the standard house plants were Boston fern, various 'old-fashioned' begonias, the durable swordplant, the indestructible aspidistra, or leggy India-rubber plants.

"Today's house plants, too varied to enumerate, include interesting araliads, a variety of gesneriads, plus numerous kinds of orchids and bromeliads that one would never have suspected could be acclimated in the average home. What has happened in the house plant flora has been equalled in most other horticultural categories.

"Major thanks for the population explosion in cultivated plants, should probably go to the numerous and varied plant societies. A number of these (such as the Bromeliad Society, the Holly Society, and the Palm Society) have only come into being since *Hortus Second* though many of the long established societies, such as the American Orchid Society, have increased tremendously in size.

"The combined impact and interest of these groups in their own specialties have inevitably had their effect upon the offerings of seedhouses, nurseries and garden centers, all of which now offer a greatly increased variety of plants."*

*Reprinted courtesy of *New York Times.*

growing interests

Cathe Ciletti works with her father at his nursery, DiCrecchio's. She is a member of the Pennsylvania Horticultural Society and the African Violet Society of America. She won a blue ribbon for her sunny windowsill filled with succulents at the 1977 Flower & Garden Show.

hoya compacta regalis

The hindu rope, *Hoya compacta regalis,* has been a favorite of mine because I like its strange foliage and beautiful light pink, upsidedown flowers that have a pungent chocolate scent. It is a succulent plant originating from Southeast Asia. This hybrid specimen was given to me by my friend Poppy Green.

It is an easy house plant because it requires low light and little water in the winter. It blooms from May to August; during that time it should be kept slightly moist. It blooms from nodules on the branches spaced every two inches on a mature plant. Don't remove them from the plant because it reblooms on the nodules every year.

You can propagate by cutting a 2½-in. section and removing three leaves. Dip the cut end into the rooting medium and then place in light potting soil mix: one part peat, one part vermiculite and one part charcoal.

Mealy bug is the only pest I've seen on it. I used malathion in the house and Temik in the greenhouse. At present the plant is located in the kitchen in a shaded window.

Cathe Ciletti

Pat Passanante has created seven gardens over a 30-year period. They've ranged from three acres to a 4 ft. x 12 ft. apartment terrace where she had more than 200 rock plants in cement blocks and raised seedlings in the bedroom.

geranium dalmaticum

There is a true geranium and a reliable perennial in our area, unlike the pelargoniums that are sold as geraniums. It is a charming small plant, equally at home in the rock garden, the perennial border or the planter. It will do well in full sun or light shade, but because of its size, should not be crowded or overhung by larger neighbors. The flowers are pure pink without the hint of magenta common to this family and they appear in large numbers in late May, continuing into June for some time, depending on weather conditions. They will all face toward the strongest light, which should be taken into consideration in visualizing the flower effect. The plant increases modestly in girth from year to year and is easily propagated by removing rooted pieces in the spring. I prefer to give these a period in the sand frame, but I doubt that is essential. They may also be raised from seed if a large number of plants is desired. The foliage is handsome throughout the season and the plant is neat and compact in growth, so that it would make an excellent edging for bed or border. It is about 6 in. in height when out of flower and 8 in. to 10 in. when in flower. The amount of spread is easily controlled but each plant should be allowed about a square foot of space when set out. It requires only ordinary garden soil, preferably not too rich, but good drainage is important.

There are other true geraniums such as *G. sanguineum,* about a foot in height and girth, handsome in form and flower, but undeniably magenta. *G. sanguineum lancastrienso* is a delightful mat with true pink flowers, capable of covering an 18-in. square. The larger form is suitable for the border but the smaller will be more at home at the top of a wall or in a planter, where it will not be subjected to dampness beneath its mat. Both of these prefer sun.

Pat Passanante

GROW A GIFT
and make someone happy

by Ed Lindemann

One of the nicer things about being a gardener and having an interest in plants is that you acquire friends who share a mutual interest. As the holidays approach you begin to consider what to give these people as a token of friendship. I find my gardening friends are the easiest to choose for and the simplest to please. And I must admit that their gifts are the ones I look forward to with anticipation. I've gathered some thoughts together about such gifts both given and received during the past years. They range from trees, to plants, from bulbs to cheese and more. Each has been fun to grow, enjoy and sometimes even to eat.

A Living Christmas Tree. I don't recommend a living Christmas tree for the average person to give or to buy for himself. However, like most gardening, if you plan, the results can be rewarding. The first rule is not to give a tree as a surprise gift or to buy one for yourself at the last minute. The reason is simple: you must decide by the end of November where the tree is to be planted, and the site should be heavily mulched 5-6 in. deep in an area 4-5 ft. in diameter. The mulch will prevent the soil in that particular area from becoming frozen when it is time to plant in late December. I have had success with live Christmas trees using the following procedure. Plan to keep the tree in the house no longer than one week. I wet the burlapped ball thoroughly when the tree is delivered. If the weather is cold the ball will freeze, making handling easier. Wrap the frozen ball in a piece of heavy plastic to retain moisture and put it in a leakproof bucket, preferably one with handles to facilitate carrying. When you bring the tree inside place it out of direct sunlight and away from any heat source. I attribute part of my success to the fact that I put my trees in a living room where the heat is shut off when it is not in use. The temperature is never above 68° on a sunny day and drops to 55° or lower at night. I checked the root ball for moisture every day and found that even with the lower temperature it's necessary to add a few quarts of water occasionally. When the tree is removed from the house I put it in an unheated garage for a few days and then move it out to the garden where it is planted. Whenever the ground is not frozen, I water the tree well to prevent excessive drying out. If you can provide the proper conditions and fit the tree into your overall garden plan it is fun to mark a special holiday with a live tree, but don't do it every year or you may find yourself with a small woods on your hands.

When Presenting a Plant. Special house plants make wonderful holiday gifts and will give much pleasure if a little care is taken beforehand. Make out your plant gift list early; don't wait until the last minute. I suggest, space permitting, that you purchase the plants four to six weeks in advance. That will enable you to acclimate them to a house rather than a greenhouse. (Remember each house is different and it will be another change for the plant when moved from one house to the next.) Keep a close eye on the plant for insects or disease and if anything shows up treat it immediately. It's embarrassing to give a sick or buggy plant. Take care in transporting the plant. Pack it in a covered cardboard box or plastic bag or even a paper sleeve made of newspaper. Have the car warmed up before loading. It's a good idea to attach a small card that gives the botanical and common name and a

continued

GROW A GIFT continued

simple set of cultural instructions. If the plant is one that you have grown yourself, the age and method of propagation might also be included. If you are unsure which plants are best suited for the people on your gift list why not give a special container, pot, basket or tub and let the recipient fill it with the plant of his/her choice.

A gift that I received several years ago and that I have since begun to give combines plant material with a container that has additional uses. Paperwhite narcissus (N. Tazetta) bulbs are placed in a plastic bag; another bag holds pebbles. The bags are packed in a casserole or souffle dish along with instructions for forcing the bulbs. You're guaranteed pleasant memories each time the gift container is used for some culinary treat. The cost of the gift is dictated by the container; the bulbs will produce equally as well in either a china souffle dish or a plastic bowl.

If you grow herbs gift ideas can be imaginative and generous; if you would like guidance with your planning, check the herb section in the PHS library. Packages of prepared herb blends for fish, fowl and fragrance, special cheeses and spreads, bottles of herb flavored vinegar are always welcomed by gardeners most of whom enjoy cooking and eating as much as tilling and pruning. One homemade gift that I received from a horticulturist last year hangs in a place of honor in our kitchen. A plaque, made from a breadboard, contains bunches of dried herbs glued to the board in an attractive pattern. The names of the herbs, along with a personal message to the cooks, are written out using alphabet soup letters. A good project for children, the supplies are simple and the possibilities unlimited.

Always looking for a new idea, I asked some fellow gardeners if they had any suggestions for horticultural gifts to give and to receive; the suggestions ranged from the practical and the whimsical through elegant: leaf mulch or humus wrapped in a shiny dark green trash can liner and tied with a big red bow, perfect for an apartment or townhouse dweller; an assortment of succulent cuttings packaged in a plastic camping egg carrier to create a greenery in a college dormitory room; dried mullein rosettes for gift package decorations (these must be hand-delivered); Christmas tree ornament terrariums and leaf print wrapping paper. Or for the person who has everything but — a copy of *Exotica* or *Hortus Third*.

If you have a garden either inside or out you have the potential materials for varied and unusual gifts. Look around you. Try some of our suggestions or experiment with something new. Grow a gift and make someone happy.

●

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Burpee's Golden Beets.
See page 5.

THE green scene

HORTICULTURE IN THE DELAWARE VALLEY

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The Reed's Garden,
An Experiment
See story on page 3.

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THE
green scene

HORTICULTURE IN THE DELAWARE VALLEY

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in this issue

Front Cover: Joanna and George Reed's Garden in June
Photo by George Reed

The spring pink of *Kolkwitzia amabilis,* beauty bush, is followed by interesting seed pods. The stoloniferous poppies are followed by *Coreopsis verticillata* and *Cerato stigma plumbaginoides* from early August to frost.

Back Cover: Another part of their garden in August
Photo by Edmund B. Gilchrist, Jr.

The combination of globe thistle *(Echinops* spp.), hemerocallis, baby's tears, Russian sage *(Perovskia atriplicifolia),* daffodil garlic *(Allium tuberosum)* and helenium copper spray, give good color in late summer. The same area is showy in April and May with bulbs, *Arabis alpina,* dianthus and veronica. In June peony, iris and *Salvia pratensis* hold sway; in July all is yellow and gold with species of hemerocallis, oenothera, heliopsis and anthemis.

OUR GARDEN IS AN EXPERIMENT

to fill our needs and dreams

July

photo by Edmund B. Gilchrist, Jr.

Hemerocallis hyperion, one of the finest, holds well in hot or wet weather and permeates the garden with fragrance. It can be divided every third year for extra plants.

One hot summer day when the wild flowers were particularly scarce and it took almost two hours to glean enough for a few sparse bouquets, I decided to become a gardener. Like so many beginners I made the decision to be sensible and have a perennial border. None of those short-lived annuals or bothersome biennials, just the good old dependable perennials. Plant them once and repeatedly enjoy and cut stately delphinium, lupine, iris, day lilies, peony, pinks, daisies and no end of other bounty.

Friends were generous, giving me starts of their favorites; liking abundance I grew others from seed. My first realization that those bounteous borders are not as simple as I had supposed came at this time. The lupine and platycodons germinated and grew; however, never did I successfully transplant them to the desired spots. On the other hand delphiniums were easy. Why did they have such a reputation for difficulty in the Philadelphia area? I could not fail with them, even won a red ribbon at a PHS Flower Show after losing 15 inches in the revolving door of the Suburban Station Building.

Now inspired and loving gardening for itself rather than the bouquets produced, I proceeded to plan the surroundings. I designed the garden by building walls, planting shrubs, digging a sunken garden. I created all sorts of hazards for my perennials.

The air circulation was changed or reduced to none at all. The larger plants created shade and their roots unhappily competed for water and nourishment

continued

A thwarted search for bouquets creates a gardener. The gardener grows with a constantly changing garden.

by Joanna Reed

Joanna Reed was a student for two years at the School of Industrial Art, now the Philadelphia College of Art. She also attended the Arboretum of the Barnes Foundation, and adds that she learned propagation from Dr. Skinner, plant material from Mrs. Barnes and Dr. Fogg, and design from John Kistler. She thinks of herself as a trial and error gardener with a strong interest in design and plant material rather than botany.

Early June
Iris germanica

photo by George Reed

Early May

photo by George Reed

Alyssum saxatile comes in several varieties. The palest yellow is *A. sulphureum*. New plants are readily available by seed. The only trick is to plant out in permanent position when young because it has a long taproot. The lavender blue on the upper level is *Phlox divaricata*.

with the perennials. Our soil, disease-free after being fallow for years, now fell prey to problems gathered along with my growing number of plants. The stately delphiniums died one by one from crown rot and this gardener realized the first flush of success had been beginner's luck, nothing else.

All this while, my enthusiasm and

Having both moles and voles we avoid tulips and other rodent caviar.

curiosity led me to catalogs, books and eventually to the Pennsylvania Horticultural Society's Library. Soon I graduated from the how-to articles, especially those guaranteeing low maintenance and trouble-free plantings. The constant change in a garden is the joy and challenge of the hobby; success for one person is frustration for another. Reading the words of some of the greats of the garden world I fell in love

continued

Mid June

photo by Edmund B. Gilchrist, Jr

Lychnis chalcedonica has a long season of bright bloom if regularly deadheaded. When columbine thrives in a location hybrid surprises are a bonus. Destroy any foliage showing signs of leaf miner.

with the plant materials they spoke of in such glowing terms, combining colors, textures and forms like artists using paint. Where Gertrude Jekyll or William Robinson planned borders for manor or cottage they considered all facets, exposures, soil, air, drainage, choosing the proper plant for each spot, contrasting height, texture, color, changing them about if necessary until they were growing well and provided the desired harmonious effect. How consoling to learn that even royalty had to be patient as the cuttings made for the Saville Gardens grew into the shrubs and perennials for the glorious sheets of color to be enjoyed for years to come. How exciting to hear Henry du Pont exult over the first of his *Primula japonica* to establish themselves further down Cluny Run. How sensible of Vita Sackville-West to use what did well in her garden and to abandon the frail half-hearted failures, which persisted in being failures. What endless possibilities would come from using native and wild perennials as suggested by Hal Bruce and Bebe Miles. Above all, how fortunate to have so many volumes of pleasant reading and sage advice readily available. During the hottest days or after an especially hard winter or protracted rainy spell I felt, at times, that the answer might be the world of books rather than the world of a hoe. But no —concepts change, plant materials must change, the gardener's bones do change but who could resist the enjoyment and excitement of each season as it comes.

Our garden is an experiment to fill our needs and dreams. Our designs and systems of maintenance have been gleaned from books, garden visits and other gardeners' ideas adapted into schemes of our liking. Being situated in the country, mass plantings are the most effective in the more open areas. We test plants new to us in several locations, then propagate to obtain the required numbers. Thus far the most colorful and reliable materials to use this way have been many varieties of narcissus, muscari, chionodoxa, *Scilla siberica* and *S. hispanica*. Having both moles and voles we avoid tulips and other rodent caviar. Forget-me-nots, *Myosotis semperflorens* and *Anchusa*

I could not fail with them, even won a red ribbon at a PHS Flower Show after losing 15 inches in the revolving door of the Suburban Station Building.

myosotidiflora, Phlox divaricata, Chrysogonum virginianum and violets accompany the bulbs. These are followed by drifts of early day lilies and siberian iris, blue, white and deep purple. Our aim is to repeat the colors in such a way as to direct attention to other areas of the garden. All of our perennials are used in conjunction with shrubs and trees plus a bit of natural woodland. *Stylophorum diphyllum, Hesperis matronalis* and ajuga are easy plants to establish in masses. The first two by seed, the latter with sods. These three can be a nuisance in a confined garden but where space allows try them, lots of color for little effort. In damp areas we use astilbe, *Iris kaempferi, I. pseudacorus* and *I. versicolor*. These are followed by the later day lilies, *Rudbeckia hirta, Monara didyma,* the *Eupatorium perfoliatum, E. purpureum* and *E. coelestinum, Vernonia noveboracensis* and *Lobelia siphilitica* are followed by the goldenrods and asters. Once established the only care they require is an annual mowing down in late fall plus an occasional top dressing in winter with manure if available, otherwise, Plant-tone or 5-10-5. Newly set out plants are heavily mulched. Grass and weeds growing between older clumps

August

photo by Edmund B. Gilchrist, Jr.

The various green mats of thyme and the grey *Santolina chamaecyparissus* give color and structure to this dooryard area winter and summer. Color from March to November is provided by bulbs, perennials and annuals.

March

photo by George Reed

Helleborus niger (Christmas rose) is a welcome bloom when most needed, during the winter months. It needs rich soil; author planted to be seen from window for fullest enjoyment.

August

photo by Edmund B. Gilchrist, Jr.

Allium tuberosum

are turned under with a shovel before going to seed, or if time is limited they are cut back with a sickle.

In the more limited spaces and formal areas we use a wider variety of plants; luckily our garden is such that we have both sun and shade. At one point it was headed for complete shade because we overplanted. How easy it is to convince oneself that trees and shrubs can be kept within desired bounds. I have at times wondered if the specified sizes given in those many tidy tables are supposedly accurate, an optimistic guess or we owned a very unusual pony. She was our sole source of fertilizer when we planted the majority of our woody material. Trees averaged 18 in. - 24 in.; seedling shrubs came a bit larger. The attrition rate between pets, children and natural disasters was high; consequently, I tended to plant spares. Five years of patient and hard work by George has brought the sun back into our lives and with it the color and fragrance of perennials.

We still go to Longwood to revel in lupines, delphiniums and real lilies; at a future date we will try them again. At present some of our favorites for sun are the dianthus, nepetas, geraniums, poppies, achillias, all in many varieties. Heucheras, veronicas, echinops, shasta daisies, heliopsis and the heleniums are relatively trouble-free. The artemesias and *Stachys lanata* make a pleasant grey or silver foil for the brighter colored plants. Our collection of salvias gives bloom from April to October. Some of these are tender but can be carried over on a cool porch if cuttings are made between mid-August and September 1st. For fragrance we have lavender, thyme and dianthus.

In the shady areas we use pulmonaria, *Amsonia tabernaemontana, Baptisia australis,* epemedium, *Oenothera fruticosa, Digitalis ambigua* and *Digitalis minima.* For winter structure we reply on the shrubby herbs such as *Santolina virens, S. chamaecyparissus, Satureja montana* and *Teucrium chamaedrys,* as well as the seed pods of *Inula helenium, Echinacea purpurea, Iris siberica* and hemerocallis. We are replacing some ground covered areas with large clumps of long-lived perennials such as hellebore, hosta and *Begonia evansiana.* Not only do we have three seasonal splashes of color but it is easier

continued

October

photo by George Reed

Chrysanthemums in a sunny border. Early summer color is provided by *Nepeta mussini,* a soft blue, and *Silene armeria,* sweet william catchfly, a bright pink. A low border of annuals bridges the two seasons with their color.

August

photo by Edmund B. Gilchrist, Jr.

This area is at its fragrant best when the lavenders and thymes are in bloom. Drainage is most important in these sunken areas. Helenium copper spray, *Allium tuberosum* and marigolds provide late summer color.

to deal with the bird planted poison ivy and bittersweet, a problem for country gardeners. These plants would be interplanted with some of the smaller bulbs and possibly *Mitchella repens.*

We still have not achieved a proper perennial border, probably never will, but we have enjoyed finding suitable spots for all the plants mentioned and more places where they will continue to grow with minimum care. It is exciting to have at last a framework of sturdy dependable material, which can in the future be enhanced with the prima donnas of the plant world. We hope in time as our energies are more limited, a remembered article of Doretta Klaber's will become a reality for us. She had written that she hoped that by finding the right spot for most of her plants, her weeds would eventually be seedlings of her favorite flowers. I saw her garden shortly before she died and it was a Persian carpet of volunteer plants interspersed among those she had so long nurtured.

●

KEEPING HOME GARDEN RECORDS

by Jane Pepper

Garden record-keeping has always been a struggle for me. Each year I begin with good resolutions only to discover I lack the discipline to be a consistent recorder. Happily I have discovered other gardeners tend to be equally undisciplined, but many of them have devised successful record-keeping systems that consume a minimum amount of time. Each system is successful because it is unique to its creator. However I hope you can adapt some of the ideas in this article for your own use.

vegetable gardens

Depending upon your type of garden, you may need more than one recording system. Growing vegetables, for example, is with few exceptions an annual affair, so you will depend heavily on notes from last year's garden when planning for the following year. You will probably want to record planting dates, harvest dates, yields of particular varieties, and your row system so you can rotate crops in following years. But where will you store this information so you can use it for next year's planning? Dick Lighty, coordinator of the Longwood Program in Ornamental Horticulture at the University of Delaware, notes activities in his vegetable garden using a combination of temporary row labels, seed catalogs, and order forms. Lighty labels each row as he plants, and as the season progresses makes brief comments in the appropriate seed catalogs or on Xerox copies of the seed order forms. These comments provide sufficient background material to plan next year's garden.

Another enthusiastic vegetable gardener, Dave Foresman, coordinator of the Professional Gardener's Trainee Program at Longwood Gardens, pointed out one of the most important aspects of record-keeping. "It's a matter of habit," said Foresman "and if you can get into the habit it will cease to be a chore." Consequently, Foresman keeps a pad on his desk from March till November and makes a few brief notes on his vegetable garden each morning. Then, when he has time, he transfers these to a looseleaf notebook in which he also keeps a planting plan for each year. For our vegetable garden I find a large-scale (½ in = 1 ft.) plan of the garden a useful place to note the sort of information discussed in the previous paragraph.

annuals and perennials

Bill Frederick, landscape designer and author from Hockessin, Delaware, uses several recording and planning systems. In the Studio Garden which contains mostly annuals, perennials and some woody plants, Frederick experiments each year with a new or refined color scheme. When I visited him at the end of September, I was fascinated to discover he was designing the 1978 color scheme for the Studio Garden. Here he was, doing what most of us do in mid-winter when we can no longer remember the true color or growth habit of most plants. Frederick, on the other hand, had the plants on hand for reference.

continued

Jane Pepper lived in Edinburgh, Scotland, until 1967. She received an Associate Degree in Landscape Design, Ambler Campus of Temple University, 1974; Bachelor's Degree in Plant Science, University of Delaware, 1976; and is currently working on a Master's Degree at the University of Delaware in the Longwood Program in Ornamental Horticulture. She gardens and struggles with her records in Media, Pa.

bulbs and card files

Bebe Miles, author of *Bulbs for the Home Gardener* (Grosset & Dunlap, New York, 1976), stressed the importance of a flexible recording system. For her that means a card file, arranged alphabetically by scientific name. Each bulb (or groups of bulbs of the same variety) has its own card on which she lists name, source, planting date, and in some cases information concerning special experiments. Each spring she tries to note bloom dates, but she admits that her best records are on the early spring bulbs.

accession* numbers

The most extensive card file system I saw is used by Dr. and Mrs. John Wister. Wister, previously director of the Scott Horticultural Foundation of Swarthmore College, incorporates his records into those of the Foundation, thus making them more elaborate than most home gardeners would need. He did, however, mention that the accession numbers used in most botanic gardens and arboretums could be useful in the home garden. At the Foundation each new plant is given a number in the order in which it is acquired. In addition to the accession number the plant recorder lists the date, the source, the name of the plant, and sometimes the price, in the accessions book. A separate card is then made and filed alphabetically by scientific name. Wister told me he started in the 1930's at #1 and accessioned 14,000 plants before they broke the numbers down by year. The number for the first accession in 1978 will read "78-001."

labels

Plant labels, essential for educational purposes in botanic gardens and arboretums, are not often found in private gardens. Some gardeners consider them an ugly addition to the landscape. Others tolerate them in an effort to keep track of the true identity of all the plants in their gardens. As Sally Reath points out "the key to a plant's culture is its name." The type of label you use will depend on how long you wish it to last. Dick Lighty uses strips of Clorox bottles marked with indelible ink for temporary vegetable garden labels. For more permanent labels he uses the method noted in the box on page 12. Etched zinc also provides a relatively permanent unobstrusive label. Sally Reath uses these and marks the front with a waterproof pen and sprays the writing with a film of clear plastic. The reverse side she marks with a crayon supplied by the label manufacturer. Reath indicated the crayon produces an untidy label, but it acts as an insurance should the writing on the front side become faint.

. . . the Four P's — Preliminary Planning (January, February, March), Passionate Planting (April, May, June), Peaceful Pottering (July, August, September), and Pepy's Proposition (October, November, December).

photographs and journals

Labels and card files are practical ways to keep track of matters in your own garden, but how about things you see in other gardens. Dick Lighty and Bill Frederick both use a combination of color slides and a journal to record this information. Lighty finds photographs especially helpful to remind him of blooming dates for perennials and also of successful color schemes seen in other gardens. Frederick, who has kept a journal since 1959, records the information on rough paper then transfers it to a leather-bound book as time permits. Transferring information is time-consuming, but is essential for successful journal keeping. The journal should be a solid volume that psychologically gives you a feeling of permanence. It will therefore not be a welcome addition to the paraphernalia you already carry on your garden visits. My solution to this is a 3 in. x 5 in. notebook that travels easily in all but the smallest pocket.

calendars — historic and more recent

And what, you may be asking yourself, does this author plan that we should do with these cards, photographs, and journals? At home the benefits are obvious. This is the way for those of us who do not have encyclopedic memories to improve upon our gardens of previous years. On a wider front, those who speak or write on horticultural matters find their records an invaluable source of inspiration and material. Through the ages many writers have recorded their horticultural findings in calendar form. John Evelyn, one of England's most famous diarists, was for many years thought to be the first to write a *Kalendarium Hortense*. However, in 1932 the *Garden Book of Sir Thomas Hanmer* was discovered and published. The original manuscript was

*Technical expression used by libraries, arboretums, museums, etc., meaning "item added."

photo by Bill Frederick, Jr.

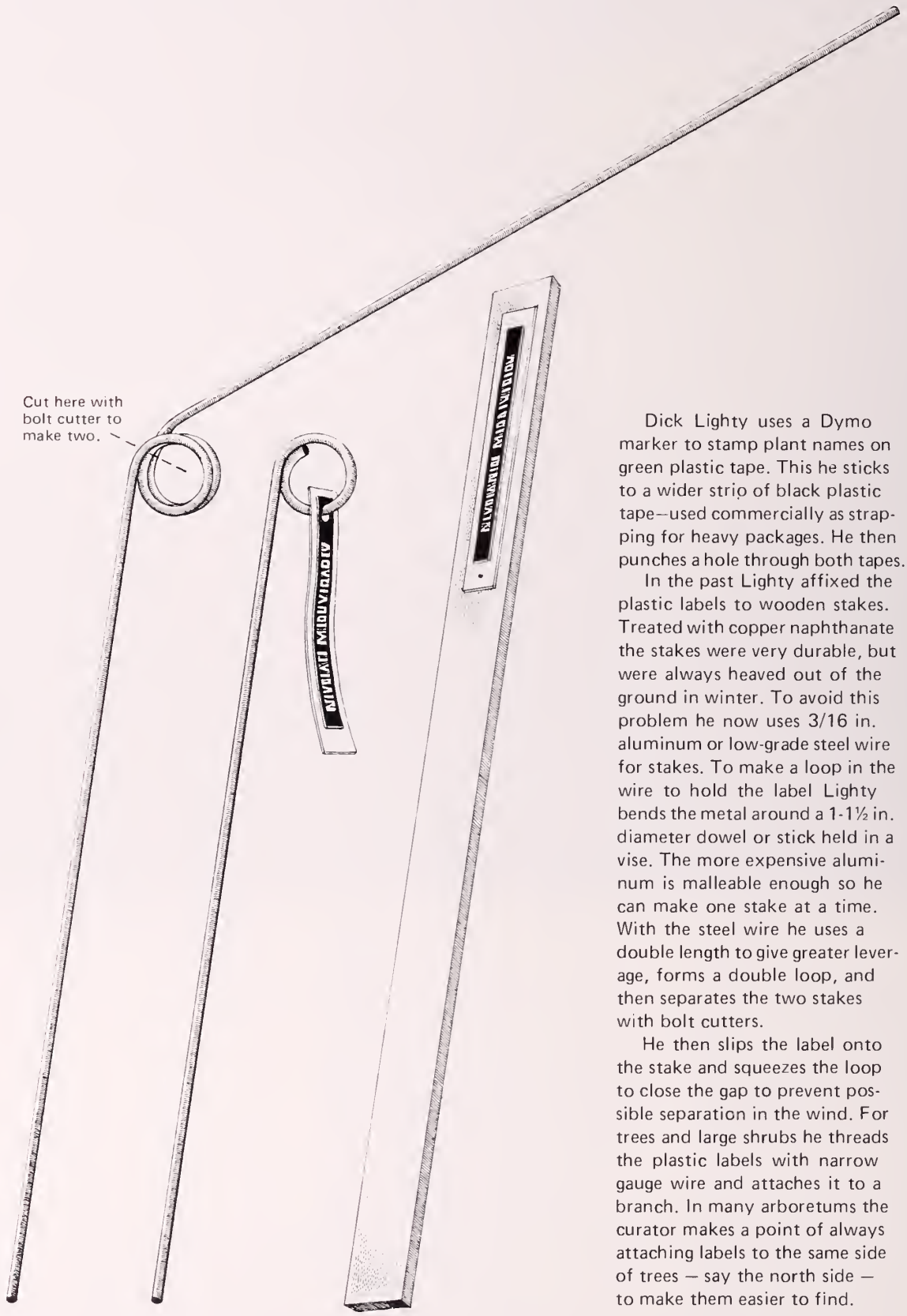
Bill Frederick sets up his desk in the garden in September to design for his '78 color scheme.

dated 1659—five years ahead of Evelyn's calendar. Hanmer records "Remembrances of what is to bee done in a GARDEN every Monthe of the Yeare, and what plants are usually in FLOWER in each Moneth in England." In December he suggests you "make a little fire in your Wynter house for Greenes on frosty nights."

A garden calendar of local interest, *Through the Garden Gate,* was written by Marion Martin Rivinus of Chestnut Hill, Pennsylvania, in 1935. Mrs. Rivinus notes that her remarks are "for more or less established gardens situated in the vicinity of Philadelphia, the buggiest part of southeastern Pennsylvania and gifted with temperamental winters, long hot droughts in summer interspersed with tropical deluges; but divine springs and falls." The author divides the year into the Four P's — Preliminary Planning (January, February, March), Passionate Planting (April, May, June), Peaceful Pottering (July, August, September), and Pepy's Proposition (October, November, December). She also includes a little pocket for keeping magazine clips and a section for readers to include their own "Notes."

Several authors have published garden calendars with such spaces for the reader to include personal notes. Others have published diaries that span more than one year. For some gardeners these may be helpful, but I have found those with the best records to be the gardeners who have devised their own methods to accommodate their unique needs.

continued



Dick Lighty uses a Dymo marker to stamp plant names on green plastic tape. This he sticks to a wider strip of black plastic tape—used commercially as strapping for heavy packages. He then punches a hole through both tapes.

In the past Lighty affixed the plastic labels to wooden stakes. Treated with copper naphthanate the stakes were very durable, but were always heaved out of the ground in winter. To avoid this problem he now uses 3/16 in. aluminum or low-grade steel wire for stakes. To make a loop in the wire to hold the label Lighty bends the metal around a 1-1½ in. diameter dowel or stick held in a vise. The more expensive aluminum is malleable enough so he can make one stake at a time. With the steel wire he uses a double length to give greater leverage, forms a double loop, and then separates the two stakes with bolt cutters.

He then slips the label onto the stake and squeezes the loop to close the gap to prevent possible separation in the wind. For trees and large shrubs he threads the plastic labels with narrow gauge wire and attaches it to a branch. In many arboretums the curator makes a point of always attaching labels to the same side of trees — say the north side — to make them easier to find.

●

Bring Them Back Alive

by Nancy Howard

photo by B. Whallon

Origanum onites has more aroma and so much more flavor than the oreganas used here.

Bring them back alive!

Well, almost. Many visitors to our garden have been curious about where particular plants came from and wondered how to procure some of them for themselves.

Most of the "unfamiliar" were obtained by propagating a cutting or collecting ripe seeds "on location." Visits, travels, treks offer a multitude of opportunities for collecting. Many desirables, whether in a public garden, private garden or in the wild must not be dug or disturbed—nor can one find them for sale—but so often a courteous request will readily bring forth a branch, stalk or snippet; and in the wild you may often take cuttings as long as you are careful of endangered species and do not injure or damage any plant in any way.

We have found that planted cuttings can endure days and weeks of travel before arriving at their new home in the Delaware Valley to carry on and prosper.

The procedure is an easy one. If you are going out of the country write for and have in your possession an Import Permit for Plants and Plant Products from the U.S. Department of Agriculture.* Read carefully the pamphlets that accompany the permit so that you will know what you may or may not bring back into the country. Follow the rules and regulations of the particular country, state or com-

Nancy Howard is a member of the PHS Council and a director on the board of the Herb Society of America. At present, she is preoccupied with helping to raise locally a part of the remaining 2/3 of a $300,000 commitment for a national Herb Garden to be planted near the Bonsai Exhibit at the National Arboretum in Washington, D.C.

*USDA Animal & Plant Health Service, Plant Protection & Quarantine Programs, 209 River Street, Hoboken, N.J. 07030.

continued

photo by N. P. Howard

Ocimum basilicum 'Minimum.' Each house has a pot or two. The streets were deserted so we did not take snippets, but we did find a few ripe seeds on some of the plants.

munity you are visiting (every bit as important) and use your own common sense regarding endangered species—rare plants and seed pods that should not be disturbed. If there is any doubt in your mind do not touch, pull, mutilate or cut off even the tiniest bit.

equipment to carry with you

The following small amount of take-along equipment is not only helpful but I feel the secret of success. A supply of Jiffy-7 (also the sales slip from the U.S. if you are going out of the country because you may be asked to show it on reentry); a jar or packet of rootone; plastic bags to put cuttings in temporarily from the collecting field to your home away from home; small envelopes for seeds (be sure there are no tiny holes at the corners to allow the smallest seeds to escape); a sharp knife or small scissors; a marking pen; a book on the flora of the area you are visiting. The inclusion of these articles in your baggage may seem pretty ridiculous for they are so easily obtained here. However, as you travel you may not have time to go to the village hardware store and in some countries some of the supplies listed above are not available.

photo by N. P. Howard

photo by B. Whallon

Above and bottom left: The caper plant *(Capparis spinosa)*. In the past the seeds did not germinate; a cutting may be the answer. We intend to try one the next time.

Some cuttings will "take" in water, but those that do not become weakened with their days in water and do not take when transplanted to a growing medium. We suggest the Jiffy-7 because they are sterilized and are acceptable by the U.S. Department of Agriculture; they are compact and once planted they still take only a little space. They weather the rigors of travel amazingly well when days and weeks of time are involved.

The suggestions outlined above are applicable to any plants that will take from a cutting or come "true" from seed. Momentarily let us visit Crete because of its wealth of endemics, its natural beauty and because this is where we began to "Bring Them Back Alive" from.

Crete

On our first trip to this island we had the good fortune to meet two Americans, Dorothy and Bob Whallon, who for health reasons chose to retire to Crete. Dorothy is a fellow member of the Herb Society of America. Bob, a retired professor, forced to be less active physically, learned Greek rapidly. They dipped into the study of Cretan flora. Together they have acquired a knowledge that has made them international specialists in the field. Our friendship with them has added enormously to our enjoyment, knowledge and the number of "finds" we brought back from our trips.

Private gardens do not seem to exist in Crete. The whole island itself is a garden during the six weeks of April through the 15th of May. The skies are the bluest. The fields are aglow—red with poppies, yellow with chrysanthemums, pink with wild gladioli, blue with lupines, purple with French lavender; the hillsides a blaze of yellow with euphorbias, brooms, and phlomises. Then there is a myriad of small flowers hiding in all the nooks and crannies of rocks as one walks, climbs or even motors along the roads.

The island is only 90 miles long but entirely different plants grow at the western end than at the eastern, and of course there is a variation from the seashore up the mountains through the plateaus to the snow-clad peaks. Before April 1st it is a bit cool and the blossoms have not fully opened. Come mid-May the summer heat descends; the

continued

Bring Them Back Alive continued

rains have ceased and in a matter of a few days fields and orchards have become brown and seared of their colorful carpets.

Our favorite method of collecting was to set off in the early morning for some remote village where we knew or suspected the herb and flora hunting might be fruitful. Bob would install himself at the cafe and would soon be surrounded by all the natives, ecstatic with an American visitor with whom they could converse, particularly about herbs, one of their favorite topics. The rest of us would take off down the gorges and up the hills returning to the group with plastic bags bulging with treasures to be identified; the natives related the lore and the many cures were described at length with Bob translating. We learned much; then into the plastic bags we returned any cuttings, or seeds to their envelopes, properly marked. These were the plants we thought might prove to be interesting in the Delaware Valley.

Down the mountain we would then proceed slowly, perhaps stopping en route to explore that little bit of fluff we had noticed on our way up, and to our delight after a good climb, discovered the *Paeonia clusi*. Just one plant all by itself. It is quite rare and needless to say we photographed only. We wanted to leave the plant completely undisturbed and the seed, of course, were not yet formed.

The whole island itself is a garden during the six weeks of April through the 15th of May.

Once back at the home away from home the snippets were carefully prepared and put into the expanded peat pellets, again properly identified. From then on until our arrival home they were tended as any ordinary cutting, being packed with care for traveling between stops and unpacked overnight or during long stops, watered and fertilized as necessary.

adapting

Many plants we have brought back have adapted themselves to this area and have proved to be welcome additions to our garden and table. The Greek oreganos, in particular *Origanum heracleoticum* and *Origanum onites* deserve to be mentioned. They have so much more aroma (when one brushes past) and so much more flavor when used in cooking there is no comparison with any of the oreganos — plants and dried concoctions—available here. In Crete they grow wild. Large areas of hillsides and rocky places will be covered with one or the other. They do not necessarily grow side by side, and their blooming period occurs at different times. *O. onites,* pot marjoram sold as seed or by nurseries as plants here, is very similar to *O. vulgare*. The blossom is light pink instead of dark mauve, but it continues to be rangy, invasive and has as little flavor as *O. vulgare,* whereas, *O. onites* Cretan/Greek pot marjoram and *O. heracleoticum,* Greek oregano, have flavor, aroma and a white flower. The latter are neat, tidy plants in our garden and stay unto themselves. They do not become invasive. Both are good container-grown plants and retain much of their flavor during the dark winter months if grown inside.

Another genus of real fascination is ocimum — basil. It has been grown by the Greeks since time immemorial. It does not grow wild; you cannot purchase seeds—or rather Greek seeds (they probably collect and save their seeds)—but every house has a basil plant, for religious purposes not for cooking. The usual plant seen is a variety of *Ocimum basilicum* 'Minimum.' It was a surprise to discover in the small town of Myrtos on the southeastern coast a quantity of previously unseen varieties, one of which might be the "tufted" basil referred to by Shakespeare. Each house had a pot or two or three and it was a sight. The neat, tidy streets with their well cared for plants were deserted. Not a person in sight to question. We did not take any snippets, but we did find a few ripe seeds on a few plants. These we brought home; they germinated nicely and have produced good plants.

One has to have a challenge. On our next trip it is *Capparis spinosa,* the caper plant. Seeds previously brought back did not germinate. A cutting may be the answer despite the rather precarious spot it chooses to grow from. It is a handsome plant cascading down over high rocks and when in full bloom it should prove spectacular!

photo by N. P. Howard

The group returns from the gorges and hills to have their finds identified.

fuchsias

photo by Edmund B. Gilchrist, Jr.

F. 'Fulgens'

by Walter K. Howard

When we called to check on his biography we found Walter Howard was atop Anapurna in the Himalayas. Needless to say, he was not working on his fuchias. *Ed.*

Fuchsias, often considered old-fashioned plants, have become more and more popular in recent years. Now it is an exception if you can't find one or more varieties in a retail house or garden plant outlet. Cultivation of this diversely colored genus can be a rewarding and challenging enterprise in the Delaware Valley. Rewarding in our spring and summer, and challenging with our week to 10-day temperatures of 95° in July and August.

The genus fuchsia was discovered by a botanist, Pere Plumier, in the foothills of San Domingo (Dominican Republic) around 1703. He named the new genus *Fuchsia triphylla flore coccinea,* after Leonhart Fuchs, a German professor of botany in the 16th century. Linnaeus later dropped *flore coccinea* and the plant is now *F. triphylla.*

A large number of fuchsias are endemic to Central and South America. Seven species, however, are found in New Zealand. *F. excorticata* grows to tree proportions and is a common tree in the New Zealand bush. At the other extreme of the New Zealand species is *F. procumbens,* which grows close to the ground, similar to a vine, rooting as it spreads. This is the only fuchsia with an orange-yellow color.

The following comments are based on my experience of growing fuchsias

continued

during the past 12 years—the last five years more extensively. The experience may not agree with any other writings on the subject.

I usually start the spring with around 50 baskets and 50-75 standards or upright plants, depending on how ambitiously I have propagated during the winter months. Needless to say many do not end up in the most favored growing conditions, yet I have had an opportunity to experiment with different types under various conditions. At present I have around 50 different varieties and have probably experimented with around 100.

the environment

A cool damp environment, with some sun, is the ideal growing condition for fuchsias. Early morning summer sun (before 10 a.m.) appears to be the most satisfactory for growth and bloom, or late afternoon sun, after 4:30 p.m. I have experimented with many varieties giving them a range of no sun at all to two or three hours at midday. Very few have survived comfortably during the heat of the day; *F. fulgens, F.* 'Autumnal' and *F. megellanica gracilis variegata* are the exceptions. Some varieties surviving morning sun up to 11:00 a.m. in good condition are *F.* 'Mrs. Lovell Swisher,' *F.* 'Sunshine,' *F.* 'Little Fellow,' and *F.* 'Abbe Farges.' All, however, do better with only the early morning or late afternoon sun.

All fuchsias need moisture, and foliage misting once or twice a day, depending on the temperature, seems as vital as keeping roots from drying out. Baskets, because of their exposure, dry out quickly and during periods of very high temperatures should be checked for dampness perhaps three times a day. Remove all seed berries, dried leaves and branches as they appear.

Fertilizing regularly is vital for good growth and profuse flowering. Once a week, with half of the prescribed amount of fertilizer seems to work well. A schedule of Peters 20-20-20 one week and a fish emulsion the next week has been most satisfactory. Standards or upright plants placed in the ground require less fertilizing, every two to three weeks is good enough.

One of the most frequent questions asked by visitors is what I do with the plants in winter. The treatment is simple with each plant, but not so simple with 100 containers. I cut them back severely in early September and put them in a frost-proof area, which can be either light or dark. The roots are kept slightly moist until brought out in February or March. Placing them in a lighted accessible area and leaving some green shoots on the plants seems to ease the shock of severe trimming and also permits closer inspection of the plants during the winter. I find that new growth, as sparse as it may be, makes excellent cuttings for propagating—a good start for next year's plants. It is not necessary to allow a period of dormancy for fuchsias; just cut back (about 1/3 of branches), place them in

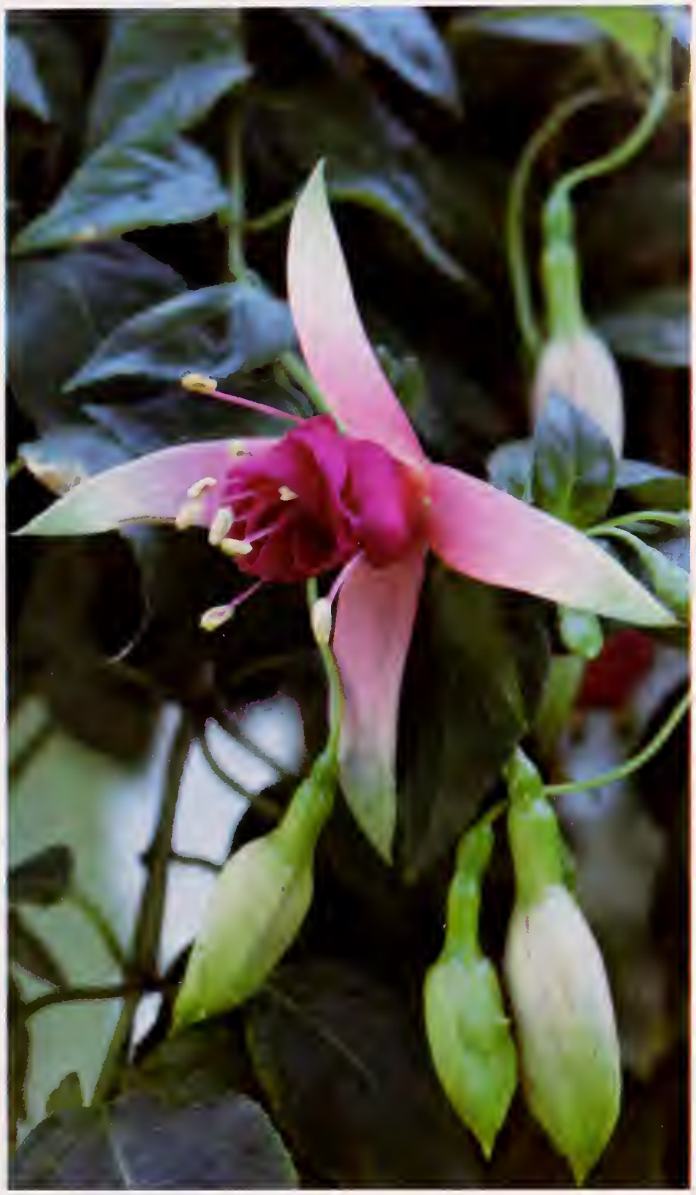
continued

photo by N. P. Howard

F. 'Hidcote Beauty'

F. 'Mrs. Lovell Swisher'

photo by N. P. Howard



F. 'Gazebo'

photo by Edmund B. Gilchrist, Jr

F. 'Marinka'

photo by N. P. Howard

a fairly warm area, give them some sun and they will put forth new growth and flowers.

As plants are brought out in late winter, standards and uprights are repotted, usually into the same size pot, trimming roots to allow about an inch for new potting soil around the periphery of the pot. They are placed under lights for lack of room in the greenhouse. I do not repot baskets; if they survive one winter fine, but I have better success starting new baskets each year. Some large baskets, with well established plants, have survived beautifully for up to eight years.

cuttings

Fuchsia cuttings root easily. The most satisfactory cutting is new growth about 3 in. long with two or three pairs of leaves. Cut the shoot just below the

At present I have around 50 different varieties and have probably experimented with around 100.

point where the lowest pair of leaves joins the stem; cut off the two leaves. Dip in rootone and insert in propagating medium. Almost anything will do—sand, perlite, granite granules, sphagnum. A mixture of perlite and fine milled sphagnum seems to work well. In two or three weeks you will have rooted cuttings. Put in a 2½-in. or 3-in. pot with drainage, but do not plant more deeply than cutting was growing in propagating medium. Any good soil mixture will do; two parts promix B, one part perlite and one part pine bark humus works very well. It is, however, on the light side and plants must be closely watched to insure sufficient moisture.

Repot into a next size container when roots become potbound; they grow quickly.

Fuchsias grown for baskets or bush uprights should be pinched back after every two or three sets of leaves to get a fuller, well-shaped plant. Continue this procedure up to a month or six weeks before you want the plant to start flowering. A plant for a standard should be started with a strong upright cutting and all lateral growth should be removed until the stem reaches the desired height. The tip should then be removed and all new growth at the top of the plant then pinched back again to two or three sets of leaves.

photo by N. P. Howard

F. 'Angel Flight'

Wire baskets lined with long milled sphagnum moss, tightly pressed against the wire retains the soil well and permits good drainage. Three plants in a 12-in. basket usually make a good showy display. That again depends on the size of plants and also the variety of fuchsia used. The old favorite in this area, *F.* 'Swingtime,' is a very satisfactory basket variety as is *F.* 'Angel Flight.' For variety I have found *F.* 'Mrs. Rundle,' *F.* 'Gazebo,' *F.* 'Hidcote Beauty,' *F.* 'Little Fellow,' *F.* 'Abundance,' *F.* 'Southgate' and *F.* 'Golden Marinka' most satisfactory. For standards, *F.* 'Mrs. Lovell Swisher,' *F.* 'Cardinal,' *F.* 'Swanley Yellow,' *F.* 'Sunshine,' *F.* 'Tom Thumb' and *F. fulgens.*

For variety in upright types, some of the species such as *F. microphylla, F. minutiflora, F. riccartoni, F. lycioides, F. arborescens, F. boliviana* and *F. isis* make interesting and unusual plants. All of their flowers are tiny—some light pink, dark purple or dark red. Their leaves are also small and the overall effect is a delightful change from the general hybrid fuchsia.

Fuchsias can also be trained on wire standards. The picture on page 19 is planted with *F.* 'Marinka,' although other varieties are equally satisfactory such as *F.* 'Madame Cornellissen,' *F.* 'Dollar Princess' and *F.* 'Papoose.'

White fly is the scourge of fuchsia growers as well as many other growers. They can be kept fairly well under control in the greenhouse with a synthetic pyrethroid bomb. Outside, consistently water-spraying the under sides of the leaves seems to be as effective as anything else.

Happy Fuchsiaing!

●

Carya ovata,
shagbark hickory

Landscaping for Winter Beauty & Interest

by Elise Felton

photos by Sam Felton, Jr.

Brilliant winter fruits *Callicarpa dichotoma* (purple beauty berry)

A winter garden's beauty lies in its form or sculpture, while the beauty of the summer garden is based on texture and color. When the leaves are gone, our eyes are filled with wonder at the winter sky and changed landscape.

When designing for views from inside the house, think about where you sit or stand the most to look out of doors. Will the garden be seen head-on or looked down upon? What is the size of your property and which areas are most observed? How does your land lie? Is there an uphill slope and view? What is the exposure in relation to the low sun's long winter shadows?

Near the house for year-round interest small ornamental trees can be planted. The *Cornus florida,* flowering dogwood, is a tree for all seasons. Larger trees planted close enough to the house to give shade, cannot be viewed in totality from inside; therefore, when you choose your shade tree, consider the texture of its trunk and bark. Dark evergreens will look closer than they actually are and a clump of white birch, in marked contrast, will delight the eye. Keep very large conifers on the periphery of your lot to really enjoy their form. Large deciduous trees will show their exciting skeletons against the sky.

Trees, shrubs, ground covers and vines exhibit other interesting features. Fruits can be most colorful, such as the brilliant display of the female hollies. Bark that exfoliates or breaks off in longitudinal strips become prominent in winter and merits our attention. Foliage colors change from green to purple-red as in two ground covers, *Ajuga reptans* 'Rubra' or *Euonymus fortunei coloratus,* purple winter creeper. Lingering seed pods dangle and dance in the wind. Magnolia and horse chestnut buds are showy.

Walls, fences, and paths of brick, pebbles or flagstone (cement is sterile) can create form and an interesting shape in your winter garden. Our old brick house supplies the fourth wall enclosing our garden. Besides ensuring privacy, the walls provide a handsome background for plant material. We have a definite outline against which our garden comes alive.

A large picture window is a path to enjoying your winter garden. If you have permitted overgrown plants to obstruct your view because privacy was your goal, consider replanting your foundation with slow-growing and dwarf plant material. A high screening of shrubbery can then be planted on your lot's border.

Hedging should be chosen for year-round beauty. It can be used to screen out neighbors, unsightly areas, noise, wind, and the streets. Evergreen hedges trap drifting leaves and act as a shelter for birds. However, anything to be covered with burlap is unsightly in the winter garden.

Try to have a focal point in your winter garden, not necessarily the same as summer's, but one that will hold your eye and keep it from looking into your neighbor's yard, now possibly quite visible. A focal point might be a piece of sculpture, a specimen tree with unusual form or winter color, or a good sized bird feeder on a squirrel-proof stand.

My enthusiasm for winter gardens—trees, shrubs, and ground covers—in the winter landscape is inexhaustible. The possibilities are endless, for each species has a different growth habit and therefore, different silhouettes and branching patterns.

●

Elise Felton is close to completing her course requirements for a horticultural degree from Temple University, Ambler Campus. The Felton's garden includes recently planted dwarf evergreens, hybrid rhododendrons, perennials and plantings for the shade. Her container-grown plants, which in summer top their brick walls, include a succulent, ivy, begonia and herb collection. The photos for this story were taken by her husband, Sam Felton, Jr., who is an amateur photographer.

1

1. Branch and twig tracery *Sassafras albidum* (sassafras)

2. Looking at the winter garden from above, *Pachysandra terminalis* 'Variegata' (variegated pachysandra)

3. The sky is a background. Fruits of *Liquidambar styraciflua* (sweet gum)

2

3

photo by Edmund B. Gilchrist, Jr.

Citrus in the Bedroom

by Edwin A. Peeples

Edwin A. Peeples authored *Summary for a Sesqui*, a brief history of PHS prepared for our 150th Anniversary Celebration in 1977. He is also a frequent contributor to the *Green Scene*.

An English couple first focused my wife's and my attention on dwarf citrus trees. The year was 1955; the place, Towson, Maryland; the time, the cocktail hour; and the reason, whiskey sours. The couple had acquired a ponderosa lemon (*C. limon* 'Ponderosa'), which had produced several fruits. The couple was delirious over the fact that each fruit was the size of a small cantaloupe and each contained upward of a half pint of lemon juice. So long as the fruit remained on the tree, it continued fresh and juicy. Once you picked it, you had to use it, and whiskey sours seemed a good way to do it.

It is typical of citrus fruits that, on the tree, they will keep for six or eight months with no apparent deterioration. Pick them, and no matter how you store them, they begin to spoil.

My wife, Mimi, whose interest in new horticultural items is always immediate and intense, wouldn't rest until she had a ponderosa lemon of her own. She bought one, a small, scrubby affair in a 6-in. pot. It bloomed and, being indoors away from bees, seemed unlikely to be pollinated by natural means. To guard against this possibility, Mimi diligently pollinated the blossoms with a camel's hair artist brush. She needn't have bothered. Since then, John McPhee, in his book, *Oranges* (William Heineman, Ltd., London, 1967), has advised us that all citrus is not only self-pollinating, but has a sex life that is unusually wild. The navel orange, for example, often attempts to reproduce a second orange, parthenogenetically, beneath the navel of the existing orange.

But these mysteries were hidden from us in those early days, and we assumed the abundant crop of ponderosas that we got were a result of Mimi's playing at being a bee. Our lemons were as large as those of our English friends and equally juicy. But artistically the plant was a disaster. Here was this small shrub, no larger than an average geranium, bowed down with fruits each of which looked like a huge, green grapefruit. So we disposed of the ponderosa but not of our enthusiasm for dwarf citrus.

For our next try, we bought two dwarfs, a calamondin, *Citrus* X *Citrofortunella mitis,* and a tangerine, *Citrus reticulata* 'Dancy.' That was in 1956.

The citrus grown in orangeries were used for every imaginable purpose: for decorating ballrooms and indoor parades, to ward off plague, for culinary purposes, for perfumes, for wine flavoring or simply for eating.

The tangerine did poorly, and that was our fault. That year, gibberellic acid was being widely touted as a growth stimulant. We doused the tangerine and succeeded in undwarfing it. It grew 5 ft. tall, abundant foliage and about three tangerines in five years. We had to get rid of it.

The calamondin, a small orange, which occasionally grows as large as 1 in. in diameter and has the sweet skin and sour pulp of a kumquat, is still alive, flourishing, and is not much larger today than it was 21 years ago, when we bought it. It lives on the broad sill of our bedroom window. Most of the year, it has ripe fruit, green fruit and blossoms, all at the same time. At the peak of its blossoming, our bedroom is heavy with the fragrance of neroli. The fruit is abundant and is delicious either sliced or squeezed into a drink.

The practice of growing citrus fruits indoors has a long history. For more than 500 years, oranges, lemons, limes, tangerines, kumquats and citrons have been grown indoors in the British Isles and continental Europe in glassed rooms called orangeries. Not as dwarfs, though; as full size trees. Charles VIII of France built the first such orangerie at his chateau at Amboise in the fifteenth century and started a craze. All the other monarchs imitated Charles; then rich private citizens imitated the monarchs.

The citrus grown in orangeries were used for every imaginable purpose: for decorating ballrooms and indoor parades, to ward off plague, for culinary purposes, for perfumes, for wine flavoring or simply for eating.

What only kings, nobles and rich merchants could do in those days, everyone can do today. Through selective breeding and grafting plus the application of the massive top and root pruning principles of bonsai, nearly any variety of citrus can be kept to a size that will fit on a sunny windowsill or in a picture window. Properly watered and fed, citruses are indifferent to the size of tree on which they are asked to

continued

Citrus limon 'Ponderosa' grown by Ernesta D. Ballard

Citrus continued

fruit. Proportionately, they will produce as abundantly on a 2-ft. shrub as on a 10-ft. tree.

The February exhibit at Longwood Gardens, for instance, displayed in 2- to 4-ft. trees, weighed down with fruit, these varieties: *Citrus sinensis* 'Valencia' (the Valencia sweet orange), the Hamlin orange and the mandarin tien chi (actually a tangerine); *Citrus aurantiifolia,* the Key lime; several tangerines, *Citrus reticulata,* and several calamondins. Hamlins and Valencias, grafted on sour orange stock, are usually full size, commercial trees. So are Key limes. But the amateur grower can also have them in dwarf form in the house.

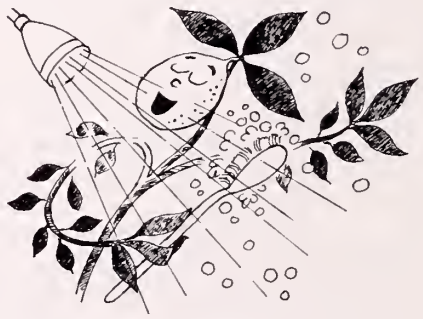
Despite their apparent adaptability, however, dwarf citruses are temperamental plants. Mimi and I learned most of the citrus crotchets from our calamondin. About every three years, it went into a sulk. No fruit, no blossoms and most of the leaves fell off. The one or two leaves that remained seemed dark, sickly and moribund.

The first time this happened, Mimi despaired. But being resolute, she unpotted the shrub, root pruned it heavily, dusted off most of the old soil and repotted it in equal parts of new humus and peat moss. After a month, tender new growth appeared, then blossoms, then fruit and we went into another three year period of abundance.

It is typical of citrus trees, incidentally, to go dormant periodically no matter how carefully they are cared for. If you don't expect these periods, they can be distressing, for nothing looks deader than a dormant citrus. But they have to rest sometimes, just as any other living thing, and the dormancy is a good time to prune the roots and repot.

We learned, too, that citrus is fussy about water. The trees or shrubs should be kept fairly dry, which figures. They grow best outdoors in sandy soil with good drainage. Keep a citrus soaked as you would, say, an impatiens, and you've got a problem. Leaves will fall, blossoms will not produce fruits, and existing fruit will wither and drop. This is especially true of lemons and limes which, commercially, have been found to grow best in Arizona. In Arizona, the sandy soil is pretty dry most of the time, and, although the days are hot, the nights are cold. Citrus does not tolerate being frozen, but it seems to enjoy brief bursts of 40° temperature.

As is true with most house plants, the leaves of citrus get dusty indoors. The dust interferes with health. In summer, the plants should be put outside in a sheltered place, so rains can wash them. The rest of the year, they should



be put into a sink regularly and given a shower.

The feeding of citrus is, of course, of prime importance. Phosphorus is essential to fruit development; potash aids the formation of starch and sugar; nitrogen is important to leaf health, and lime favors the formation of cell walls. Too much or too little of any of these substances produces adverse results. Too much nitrogren, for example. produces too many leaves, too much woody fiber and very little fruit. Too little nitrogen causes the leaves to turn yellow.

The Cultivation of Citrus Fruits by H. Harold Hume (Macmillan Company, New York, 1957) recommends for commercial bearing trees a formula of 8% phosphoric acid, 10% potash and 3% ammonia (the nitrogen source). Such commercial fertilizers as this mix are applied as solids. For house plants, we've found the best method is to dissolve the fertilizer in water and to use this solution to water the plant. Although the proportions differ from Hume's recommendation, we've found the best general purpose formula is Peters Special Soluble Plant Food which analyzes 15% nitrogen, 30% phosphates, 15% potash and 34% lime. This product is designed to be used with normal watering.

At the moment, Mimi and I are bringing along a Meyer lemon, which we nearly lost because of overwatering, and a Bears seedless lime. In buying the lime, we got greedy and took a 4-ft. tree, simply because we had a tall window that would accommodate a 4-ft. tree. The large plant has been difficult to manage. It couldn't be put into a sink for rinsing, so it got quite dusty. While it bloomed vigorously and formed hundreds of incipient limes, most of these dropped off. The few limes that matured were juicy enough, but checked on the outside, suggesting a nutritional deficiency.

Last summer, when we put the tree outdoors, it began to revive. It bloomed a second time and set fruit. We've changed the fertilizer mix to Peters. More of the fruit is staying on the tree and the skins continue a deep, attractive green. Even so, we feel we would have been more comfortable with a smaller plant. Unless someone has greenhouse facilities, we wouldn't recommend 4-ft. citrus trees as house plants.

Just as citrus trees did not occur naturally in the western hemisphere (Columbus brought them to the new world; Pizarro took them to Peru), dwarf citruses were not originally accessible to one and all. Those who had them had to develop them by pruning and grafting. Today, however, the dwarfs are readily available at most good garden centers.

Waterloo Gardens, at either its Devon or its Exton outlet, offers these lemons: *Citrus limon* 'Meyer' (the standard size Meyer lemon), *C. limon* 'Ponderosa' and *C. limon* 'Eureka' (similar to the Meyer); these limes: Bears seedless and, if ordered in advance, 'Key'; the *Citrus reticulata* 'Dancy' tangerine; these oranges: 'Honey Mandarin' (which looks like a tangerine), calamondin and 'Valencia,' and *Kumquat nagami* X *Fortunella margarita.*

For the indoor gardener, who wants a maximum delight in return for moderately diligent effort, few other plants are as rewarding as the dwarf citrus, which provides the decorative combination of flowers, green and ripe fruits simultaneously, rich, evergreen foliage and the exquisite fragrance of citrus blossoms.

●

Garden Grapes For The Table

by John F. Gyer

John F. Gyer is a chemical engineer in research at the New Jersey Mobil Oil Laboratory. He gardens in Clarksboro, New Jersey.

I grew up in the Finger Lakes Region of New York State. There each fall from late September to mid-October the weather turns crisp and the sky becomes a blue and white blanket that life seems to snuggle under while the experience of summer's warmth still remains. That is grape picking weather. And at each turning of the year in my mind I can smell the aroma of grapes ripening in the vineyard and see the laden vines.

When I began to garden in the Delaware Valley, grapes were one of the first fruits I planted. Concord, the old standard blue variety with a dark skin covered by a whitish bloom of wax, was the variety used back home for juice, jellies and wine. But for the table its flavor is a little harsh, its skin is tough, and the berry contains large seeds. I decided to try some of the newer varieties.

My search for improved grapes led me to the New York State Fruit Testing Cooperative Association, which is devoted to introducing new fruit varieties. From their list of seedless and seeded dessert grapes, I selected about a dozen varieties to compare with a few "back home" favorites. From this comparison the varieties that do best in my southern Delaware Valley garden are:

Interlaken produces in early August a good crop of long, loose bunches of light yellow seedless grapes with a sweet sprightly flavor. In the Finger Lakes it tends to winterkill, but here winter damage has not been a problem. In fact after the intense cold of 1976 the 1977 crop was the best the vine ever produced.

Suffolk Red bears in late August moderately sized bunches of sweet red seedless berries with a hint of Concord flavor and an attractive waxy bloom.

Alden is a seeded dessert type that yields very heavy crops of large, light purple, moderately sweet, fleshy berries that hang in full but loose bunches. It begins to ripen in early September but gets sweeter with time and in some years can last into October. Its only problem is that it is so fruitful that its bunches should be thinned to prevent damage to the vine.

Delaware was introduced into cultivation in the early 1850's. It is still one of the finest seeded garden grapes. Its bunches and berries are small, red, very sweet and juicy. One bunch is just the right size for a grape break during the pleasant jobs of fall garden harvest. Another plus for Delaware is that the vines do not seem to run away with summer growth. For me, Delaware's canes spread 6 to 8 ft. on each side of the main trunk. On Interlaken, for instance, the canes can grow to over 15 ft. on either side.

Its [Alden] only problem is that it is so fruitful that its bunches should be thinned to prevent damage to the vine.

training systems

When I made the first experimental planting I decided to compare two training systems: the standard two-wire trellis or Knifflen System, and a modification of the Geneva Double Curtain, an experimental system derived from the older Munson type of trellis. For the garden I prefer the modified double curtain technique. Its technical advantage is the exposure of more leaves to full sun than in the Knifflen system. This exposure gives a higher yield of grapes with a higher sugar content. The double curtain also displays the grapes attractively as they grow. The ripening bunches hang in cascades within a canopy of dappled shade.

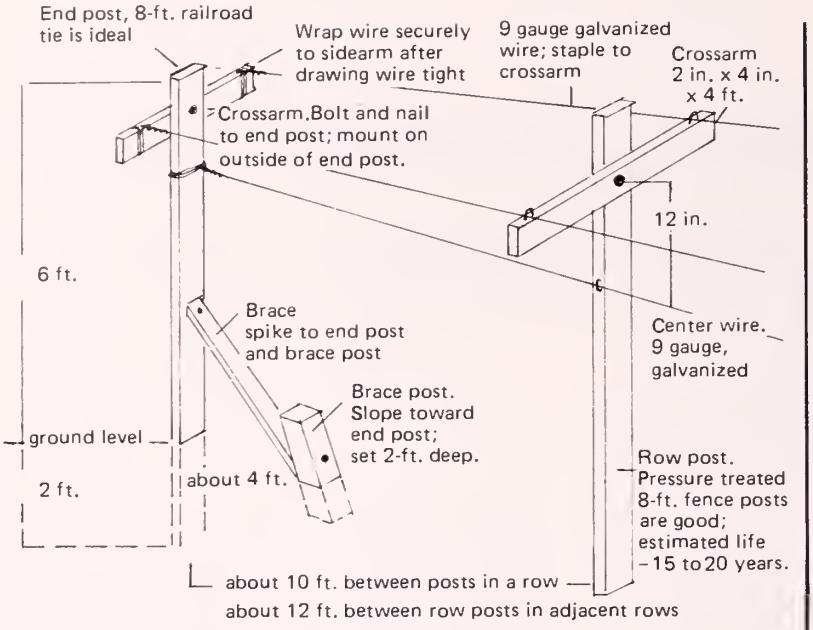
The trellis for the modified double curtain system is simple to construct. A 2-in. by 4-in. wooden crossarm about 4 ft. long is securely bolted to the top of a sturdy center post that stands 6 ft. above ground level. The end posts are firmly braced to resist the weight of heavily loaded grape vines. Solid 8-ft. railroad ties make excellent end posts. Fence posts, pressure treated with pentachlorophenol are sturdy, permanent row posts. Nine gauge galvanized wire is stretched along the ends of the crossarms and along the center post about 12 in. below the top (see Sketch 1).

In the garden, vines can be planted near the posts so long as they are protected from any oozing of the post's wood preservative. Planting close to a post gives good support for the heavy grape crops. Also, close support affords some protection from lawn mowers, because a sod or at least mowed trellis floor is both neat and practical. In a vineyard, clean cultivation is used to help in insect and disease control. For a few vines in a home garden a grass floor is much easier to maintain.

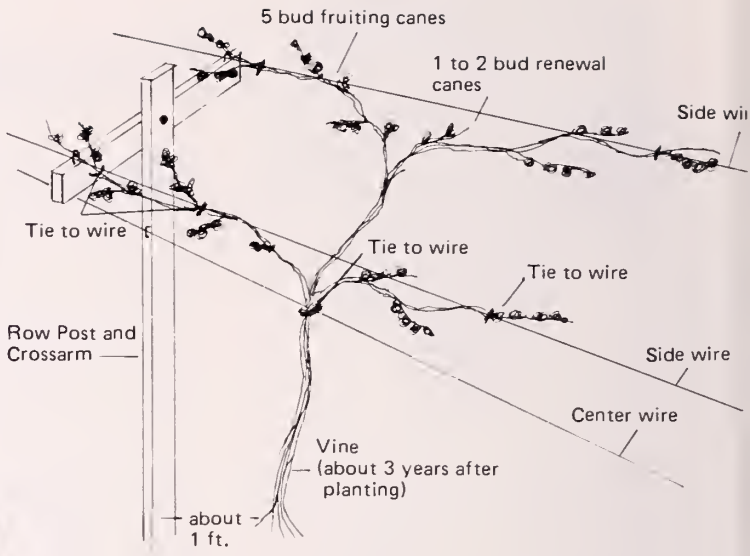
The first year a new vine is trained to grow up to the center wire as a single trunk. Branching is encouraged during the second year's growth. Ideally, one branch is trained to each side wire and the vine branches again to go in either direction along the wires (see Sketch 2).

Ample space should be left between vines. My first experiments were closely planted, about 6 to 8 ft. between the vines. Growth was so vigorous that excessive shading from late summer canes produced poor crops. The vines are now between 10 and 12 ft. apart, and do much better. With the modified double curtain system rows should be about 12 ft. apart as measured from post line to post line.

continued



SKETCH 1
Modified Double Curtain Trellis



SKETCH 2
Idealized Vine Form for Modified Double Curtain

where to plant

Grapes should be planted where they get full sun and good air circulation. Full sun assures maximum sugar production and is particularly important in the last two to three weeks before the grapes ripen. Cloudy or rainy weather in this period can result in poor flavor. Good air circulation helps dry the foliage and bunches quickly after a rain or heavy dew. This helps keep fungus diseases from gaining a foothold.

Grapes will grow in nearly any soil, but I think they have the best flavor where the soil is amply limed. High potassium and moderate phosphorus and nitrogen levels are beneficial. Too much nitrogen can produce undesirable soft, rank growth. Trace elements such as zinc, boron, cobalt and molybdenum are available in many commercial fertilizers, and can help grape flavor and vine vigor, particularly in sandy soils like those of southern New Jersey.

The objective of pruning is to balance vine growth and grape production. Commercial growers have tried to quantify this balance by leaving a certain number of fruiting buds for each pound of cane wood produced the previous summer. Table I shows this rule of thumb produced by the Geneva New York Experiment Station as a guide to vineyard producers. However, in each gardener's arbor, individual experiment and experience are the best guides to proper pruning.

Grapes fruit on branches that grow from the previous season's canes. In southern New Jersey each bud begins to expand into a shoot about late April. The first leaf or two on the new shoot is generally small and does not have a flower cluster in its axil. The next three to five leaves generally produce flower clusters. The rest on the new canes are sterile (see Sketch 3). The leaves next to the fruiting clusters are most important, for they make a large part of the sugars and provide much of the early nutrition for the developing fruit. The double curtain system assures that these leaves get maximum light, but the gardener must also protect them from insect and fungal attack to get the best results.

In grapes sap seems to flow to the end of the canes, and buds there are the first to begin growth. If a long cane with over a dozen buds is left on the vine, usually only the five or six buds at the end will develop well. The rest will be dormant or much less fruitful. In wild grapes this growth habit assures that the energy of the plant is sent to the tops of the trees where there is the best light and air. In the vineyard it can produce scraggly growth if too many buds are left on a fruiting cane.

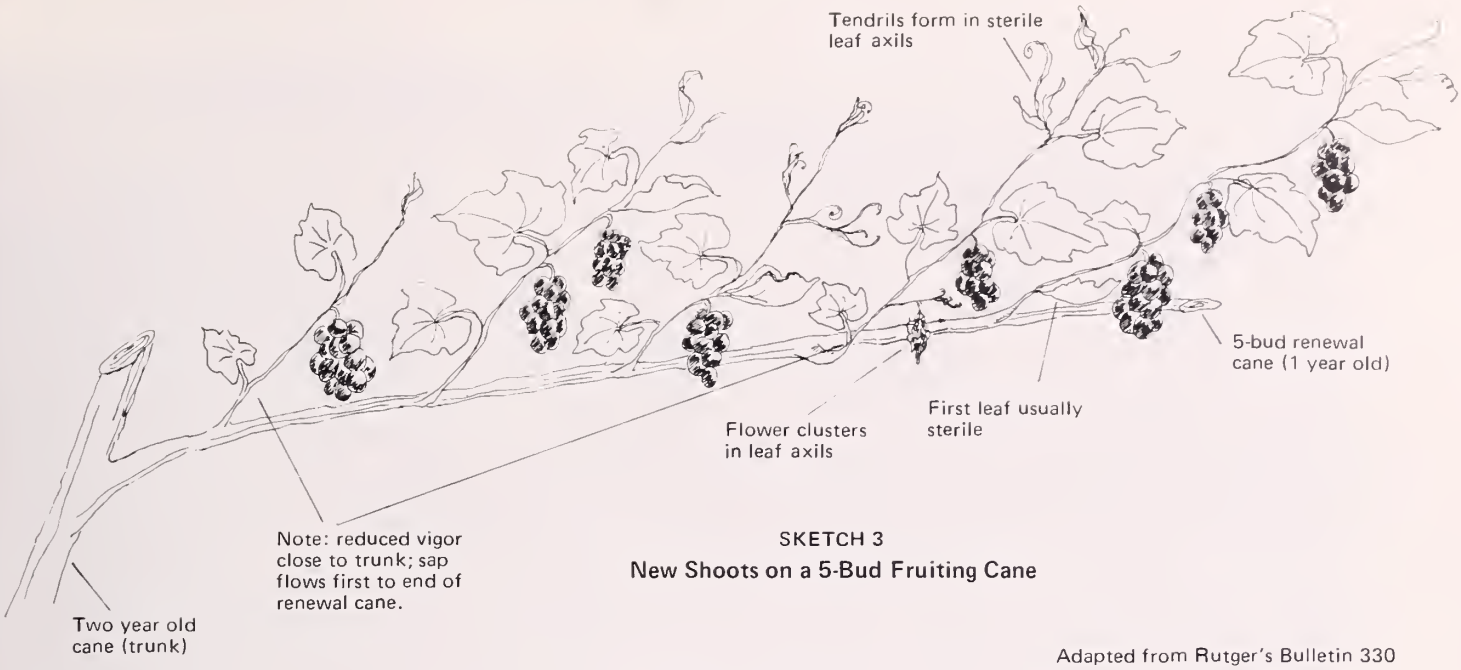
If these growth patterns are kept in mind proper pruning techniques are not difficult to learn. However, practice is the only way to translate the sketches of the agricultural bulletins into fruit production. These bulletins are a readily available valuable source of cultural information. Some that I have found particularly helpful are listed at the end of this article.

pollination

Pollination for most varieties, except the muscadine grape, is no problem. Grapes generally are self-fruitful. However, seedless grapes do benefit from special attention. Because they produce only aborted seeds, the normal hormonal responses are reduced, and individual berries tend to be small. For years commercial growers have corrected this difficulty by properly timing sprays of the hormone gibberellic acid. A 50 parts per million dilution of gibberellic acid in water sprayed within two days of peak bloom reduces blossom drop and produces larger berries on the seedless varieties. The treatment does not increase the size of seeded grapes, but if applied early enough it may make the clusters of some varieties more open and less prone to fungal disease.

Very productive varieties like Alden benefit from cluster thinning. These vines produce so many large clusters per bud that fruit does not ripen evenly, sugar content is reduced and the vigor of the vine declines. On these varieties only about two fruiting clusters per bud should be allowed to mature.

Insect and disease control should start before the grapes bloom. Captan or Benlate, used as directed on the package, are good controls for mildew and fruit rot diseases. Spectracide, a formulation containing Diazinon, gives satisfactory control of insects. In our climate lack of a control program will inevitably produce sour fruit and vines defoliated by mildew. Mildew is a par-



SKETCH 3
New Shoots on a 5-Bud Fruiting Cane

Adapted from Rutger's Bulletin 330

ticularly insidious disease because it can hurt fruit flavor, reduce the vine's strength to withstand the winter and reduce the crop produced the next year.

In some varieties fruit in each bunch tends to ripen unevenly in our climate. This is due to high temperatures, particularly at night. The problem is a nuisance, but not a disease. If grapes are given a good fungus control program the bunches can be left on the vines until they are fully ripe. However, the ripening grapes may attract some of our most persistent scavengers, the yellow jackets. These insects will puncture the ripe berries, eat the pulp, and leave the gardener only the skins.

yield

As a rule of thumb, an average healthy vine will yield 10 to 25 pounds of grapes in a season. Small varieties like Delaware average at the low end of the range; vigorous vines like Alden are toward the top. From my experience in Southern New Jersey, two vines of Delaware are needed for a good fruit supply. One vine of the larger varieties gives an ample supply to use fresh or for interesting varietal jellies, juices or experimental wines.

Experimentation with single vines of several varieties is a good use of space in a new home arbor. Inevitably you will judge some variety to be better than others for your use. The poor ones can be removed. The good ones can be propagated to fill the spaces. Grapes propagate easily by the simple time-honored methods of layering or hardwood cuttings. The details for these methods are well described in books and agricultural bulletins.

It will take about two years after your trellis or arbor is planted before it reaches full production. But then the annual ripening will signal the beginning of the abundance of fall harvest throughout the garden. The perfume of the ripening full, colored clusters will spread across your yard and perhaps awaken within you a nostalgia for a simpler time like the one over 4,000 years ago when man first experimented with the fruit of this wondrous vine.

TABLE I

Suggested Bud Numbers for Established Grape Vines

Pounds of Cane Prunings	Total Buds	No. of 5-Bud Fruiting Canes	No. of 1-Bud Renewal Spurs
1	30	4	10
2	40	6	10
3	50	8	10
4	60	10	10
5 and more	70	12	10

GRAPE CULTURAL BULLETINS I HAVE FOUND USEFUL

New York State Bulletins

New York State Agricultural Experiment Station, Geneva, New York 14456
- *Bulletin 811* — Geneva Double Curtain
- *Bulletin 794* — Grape Varieties Introduced by Geneva Station 1928-1961

Cooperative Extension, U.S. Dept. of Agriculture, Roberts Hall, Cornell University, Ithaca, New York 14850
- *Bulletin 1026* — Chemical Control of Weeds in New York Vineyards
- *Bulletin 1095* — Insects and Diseases of Grapes
- *Bulletin 1201* — Grape Varieties for New York State
- *Release T-39* — Use of Gibberellin in New York Vineyards (J. P. Tomkins, 1967)
- *Grape Pest Control Culture Guide*

New Jersey Bulletins

Extension Service, College of Agriculture, Rutgers-The State University, New Brunswick, N.J.
- *Bulletin 330* — Grape Growing in New Jersey

U.S. Department of Agriculture

Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
- *Farmer's Bulletin 2123* — Growing American Bunch Grapes
- *Farmer's Bulletin 1893* — Control of Grape Diseases and Insects

photo by Saul E. A. Berger

GREENHOUSE IN THE LIVING ROOM

by Phyllis Simpson

Phyllis Simpson, a former guidance counselor with the Philadelphia School District, teaches classes in house plants and propagation to adults. She has a master's degree in education and an associate degree in horticulture from the Ambler Campus, Temple University.

People who live in apartments and who grow house plants often have trouble deciding whether they can rearrange the living room furniture one more time so that the corner getting the morning sun can be given over to the plants. There are never enough windowsills and the dryness, especially from hot air heat, is difficult to correct for the needs of most house plants.

For the past four years, I have been living in a four-room townhouse with just one windowsill that faces southwest, the wrong direction for most plants except in the short days of December and January. I have too many plants for such a small house; they hang from the ceiling and plant poles, they are set on tiered plant stands, on the floor, near windows and under artificial lights. Their placement has to be considered seriously—they should be near the windows but not too close to doors where they might get cold drafts. Most important of all, they must not be in the path of the hot air blowing forcefully from the registers. I keep the spray bottle constantly at hand from the time the heat comes on in the fall until it is turned off in spring. Summer months do not require so much misting because it is naturally humid.

In spite of these handicaps, apartment dwellers still manage to keep most of their plants in reasonably good health, although we have no basements or special plant rooms to use as "recovery rooms" for those that do not do well. We sometimes do envy people who have home greenhouses and who get good results with much less effort.

ah-ha!

One day, however, I glanced into the window of a plant shop, and I found the solution to many of my problems: lighting, temperature, humidity, even storage. Featured in the window was a small greenhouse meant to be used inside the home. It measured 51 in. in length, 26 in. deep and 26 in. high to the peak of the roof. Sides and roof were made of glass panels; except for the two ends; the panels slide easily on tracks and can be removed to clean, although they are not difficult to clean in place. Lighting is provided by two 40 watt fluorescent bulbs operated by a timer; a thermostat and heating element provide heat in the 60° to 80° range; humidity is provided by setting the pots on moistened pebbles and by the very fact that there are many plants together in a closed atmosphere. To ventilate leave one or more panels slightly open at opposite ends. The greenhouse sits on a stand that has 10 cubic ft. of storage space for equipment, although it may be bought without the stand and set on a table.

This greenhouse, called Klima-Gro,* is available through garden centers. There are three models, all of the same size and construction, differing only in the number of automatic controls included; in addition to those mentioned above, light and water sensors are available. It comes unassembled and takes about three hours to put together. The directions are easy to follow and no special tools, other than a screwdriver, are needed. Once, when I had some difficulty with the operation of the control panel, I called the manufacturer (toll free) and was invited to return the panel, which is easily removed, and they replaced it at no expense to me. Depending on the model, the price ranges between $400 – $500.

I bought one a year ago and all of the plants that I have put into the Klima-Gro have done well. Those that were demanding in their placement—the ferns and miniature gardenia, the small peperomias and small-leaved ivies, the mame bonsai—have done every bit as well in their new atmosphere as those plants I used to envy from large greenhouses. The baby's tears is a lush green mound of foliage completely hiding the pot and is nicer, I feel, than anything in an exhibit because it's in my house where I can see it a dozen times

*Klima-Gro is manufactured by General Aluminum Products, Inc., Charlotte, MI 48813. It is obtainable, locally, from Primex Garden Center, 435 Glenside Ave., Glenside, Pa., and from The Plant Place, 2100 Walnut St., Philadelphia.

a day. For the first time, I am having success with small ferns. One peperomia in a 2-in. pot bloomed continuously for eight months.

There are between 25 and 40 plants in the Klima-Gro at any one time, depending on the size of the pots and how they are arranged. Frequently, one that has done especially well is removed and set on a table or shelf where it is "on exhibit" while some other poor thing that needs rejuvenating takes the empty space in the greenhouse.

Instructions that came with the Klima-Gro call for filling the bottom with soil and placing the plants directly into that, terrarium style. I prefer to grow mine in individual pots so that they can be moved elsewhere from time to time; also, I grow plants from various backgrounds—from rain forest to desert origins—so that growing them all in the same medium would prove difficult. Instead of soil, I use pebbles to fill the container, top them with small-size pine bark chips, and set the pots on that. In order to vary the height of the plants or to show some of them to better advantage, I set a number of them on bricks or use jardenieres of varying heights. Excess water runs down into the pine bark and pebbles. Occasionally, a few fresh flowers in a small vase add color and help to increase the humidity.

During the summer, I put the plants outdoors onto the terrace. Their hiatus gave me a chance to do some greenhouse cleaning before bringing them back in the fall. Although there were no disease problems of any kind during the first year, I am always on guard against it, so this year I am experimenting with a new set-up. I have two sections of "egg-crate"** set on bricks to raise them up from the floor of the greenhouse, and the pots stand on these.

lights

The fluorescent lights are on sixteen hours daily. I have placed a small thermometer-hygrometer among the plants to show the atmospheric conditions at a glance. At night, the bottom heat panel is set at 60° and raised to 68° during the day. The heat from the lights is sufficient during the day so that I rarely use the cable; cutting down the ventilation openings at night also helps to retain the heat. Because of the closed atmosphere, the plants do not require watering as frequently as they did previously; twice weekly seems to be sufficient for most of the plants, except the very small ones. I can be away for several days without concerning myself about watering; if watered well before I leave, even the small pots can get along for as long as four days without ill effects.

The greenhouse is the first thing people see when they come into the house and it almost always brings a response from those who come for the first time as well as from friends who have seen it many times. For me, it has made my many plants much easier to care for—the smaller plants are all in one place instead of scattered around to be near any available light source—and it is a pleasure to look at first thing in the morning and last thing at night.

●

**Egg-crate is the plastic hive-like strip often used to disguise fluorescent bulbs. It is obtainable from many electrical contractors; if they do not have it, they may get it for you from Diffusalite Company, Lenni Mills, Pa., or in Philadelphia at Plastics of Philadelphia at corner of 12th and Arch Streets.

photo by Steven Goldblatt

growing interests

cotinus sp.

The smokebush pictured here begins to show its feathery blossoms sometime in May and continues to give truly lovely foliage through September. The prettiest months are June and July when the colors seem to change almost from day to day. Our particular bush can emit shades of color varying from pale green to rosy beige to a silvery tan. This bush is probably 9 or 10 ft. tall at its highest point and now spreads almost 20 ft. across in full bloom. It is an old bush; we can account for over 31 years of growth—and when we moved here then it was of fairly good size. The trunk and lower branches are about the size of a small tree and have demonstrated strength enough to break the fence rails several times.

Each year we pick some of the blossoms in early August—just enough to use in dried arrangements through the year. They are lovely in fall arrangements or during the Christmas holidays in their natural state or sprayed. At our daughter's recent wedding reception, these versatile flowers were in the round baskets of dried flowers on each circular table.

This is the only smokebush we've had, and we've decided to start new ones, because it's an asset to the yard.

Priscilla Gates

Priscilla Gates lives near the Chestnut Hill area.

Record of a Lost America

by Francine du Plessix Gray

In which William Bartram survives alligators, encounters Indians, practices pacifism, feasts on fish heads and warns against the depletion of our natural resources.

It was not a state of affairs to be lovingly documented by our mainstream Puritan tradition, which feared nature as Satan's ally and believed that God dwelled exclusively in town: The forests resounded for hundreds of miles with the converse of wild turkeys, 15-pound trout abounded in our streams alongside the six-foot-long brown spotted garr; the eight-foot wing span of the savanna crane shadowed our marshes, and the great soft-shelled tortoise, 30 pounds in weight, lumbered in our ponds. Tigers, bears and great bald eagles still preyed in the areas of our Southeast presently named Georgia, Florida, the Carolinas.

In 1773, it took a Quaker, William Bartram, explorer, zoologist, painter and poet of the wilderness, to undertake the first scientific expedition into those terrains. His record of that journey, *The Travels of William Bartram,* thrusts us back into that dream of America's unbounded plenitude, which we may miss more fiercely this year than at any other time since we have plundered that dream.

A decade before Bartram set forth on his four-year journey, the Enlightenment's ardor for collecting scientific specimens had inspired King George III to appoint William's father, John, chief botanist for the American colonies. John was a self-educated Philadelphian who shared his dinner table with his freed slaves and corresponded feverishly with Linnaeus. He came to be known as the founder of American botany. His son William began his career drawing American turtles and mollusks for the Duchess of Portland. He continued to collect flora and fauna for a number of British patrons. And he left to the mercy of history a book of extraordinary beauty, which would vastly influence some of the greatest European writers of his time—Coleridge, Wordsworth, Chateaubriand—while remaining relatively obscure on this continent.

First published in Philadelphia in 1791, *The Travels of William Bartram* went through nine editions in a decade in six European countries. Whereas in the United States it had only one edition in 137 years until Mark Van Doren resurrected it in a 1928 version (which Dover presently makes available at $4.50). In these days when a moribund nostalgia for lost wilderness causes some of us to spend thousands of dollars risking our lives in wilderness-training camps, I recommend Bartram to any reader interested in subjects as diverse as fortitude, nature, pacifism, the depletion of our resources, the customs of the Seminole or Creek Indians and the beauty of prose in general.

A typical sequence of Bartram's adventures:

". . . the subtle, greedy alligator. Behold him rushing forth from the flags and reeds. His enormous body swells. His plaited braid, brandished high, floats upon the lake. The waters like a cataract descend from his opening jaws. Clouds of smoke issue from his dilated nostrils. The earth trembles with his thunder . . . two very large ones attacked me closely at the same instant, roaring terribly and belching floods of water over me. . . ."

Having escaped the alligators' predations, Bartram returns to his camping site, a few days' store of trout in hand, to find it frequented by bears and wolves.

Having escaped the alligators' predations, Bartram returns to his camping site, a few days' store of trout in hand, to find it frequented by bears and wolves. The wolves sneak up during his sleep to steal his trout. Bartram nibbles recklessly on wild greens and fruits, and forebearingly assures us that a dish of leftover fish heads, steamed with rice and the juice of fresh oranges, provides a sumptuous meal. In the next days, he survives the collapse of his canoe and the "vast river of etherial fire" sent by tropical lightning storms. One evening, an Indian of fierce countenance rides toward the traveler, cocking his rifle as if to shoot. There follows a scene of pacifist tactics that A. J. Muste would readily have used to illustrate his doctrine of Moral Jiu Jitsu. Bartram is unarmed, and on foot. Resigning himself "entirely to the will of the Almighty," he offers the Indian his hand and hails him as brother. After a moment of discomfort the Indian gives the white man his hand and informs him of the way to the trading house. In an unmistakable Quaker metaphor, the author muses that Indians must be as illuminated as white men by that "ray of divine light" which can instruct us to virtuous action.

Mystic, scientist and poet mingle freely in the nature of this contemplative traveler who was adopted by several Indian tribes and affectionately named "Pug-Puggy" ("flower hunter") by the Seminoles. His prose blends rapture with lucidity; passion for scientific fact with an intensely sensuous reception of nature's details. The butterfly's pale yellow wings are adorned with "little eyes encircled with the finest blue and crimson . . . a very brilliant rosary." The quill feathers of the six-foot-high savanna crane, when in flight, "creak as the joints or working of a vessel in a tempestuous sea." The language is at times recklessly personal. The goldfish's head is covered with "a *salade* of an ultramarine blue." In a letter to Emerson a half century after the publication of the *Travels,* Thomas Carlyle would praise Bartram's style for "its wondrous kind of floundering eloquence."

Bartram's vogue among European Romantics was due to those very ele-

continued



Record continued

ments of style and attitude which induced hostile reactions from his American audience: an admiration for the noble savage which had prevailed in Europe since the Renaissance; that sumptuous exoticism and grandeur of nature imagery—unique in 18th-century American letters and dismissed here as "rapturous effusions"—upon which European Romanticism thrived. Chateaubriand actually pirated entire pages of the *Travels* for his novel *Les Natchez*. Coleridge was the most addicted to Bartram's imagery. In one of numerous examples, the explorer's account of "an enchanting and amazing crystal fountain . . . which meanders six miles through green meadows," is reincarnated in the famous "Kubla Khan" as "Five miles meandering with a mazy motion/Through wood and dale the sacred river ran/Then reached the caverns measureless to man. . . ."

But this cheerful, modest bachelor probably never heard of his literary fame in Europe and might not have cared a whit if he had. The British patronage of his travels having been ended in 1776 by the Revolution, he retired to his father's house in Philadelphia and spent the rest of his life refusing scientific honors—the chair of botany at the University of Pennsylvania, Jefferson's invitation to accompany the Lewis and Clark expedition. He spent his remaining 47 years cataloguing and drawing more plants in the famous botanical gardens founded by his father, receiving fellow scientists and tutoring such younger colleagues as Alexander Wilson, the founder of American ornithology, who acknowledged his career to Bartram's guidance.

Diverse streams of Western thought —all of them expressed in this serenely monastic life—are fused in Bartram's rapture for the green world: deism, Quaker pacifism, a Franciscan disavowal of self, a reverence for every grain of living matter precursive of Gandhi's. There is no hierarchy in Bartram's scheme of being. His universe is one ungraded continuum of gorgeousness. Puritan prose writers such as Jonathan Edwards allowed themselves to admire the red berries of the holly bush only if they could compare them to Christ's blood. Salvation lay only in human community, in the city on the hill. All else was a chaos and disorder to be tamed and curbed, and the Puritans' detestation of the wilderness may have led us to rush all the more blindly upon our dream of plenitude and to devour it.

Whereas Bartram's Creator is so democratically encrusted in the created that every insect, every pistil is as worthy of our study and admiration as the human machine. "What a quantity

of water a leaf is capable of containing, about a pint! Taste of it—how cool and animating!" God reveals himself in His works rather than His word. "Ye who worship the Creator in simplicity of heart," he addresses the clamorous fowl upon awaking one dawn, "I hasten to join the universal anthem. My heart and voice unite with yours in sincere homage to the Great Creator."

It is inevitable, in the light of Bartram's ethic, that the sight of a hunter shooting a bear for the sake of its skin and oil should strike him as a "cruel murder." He admits that the savanna crane makes excellent soup, but as long as Bartram gets another source of food he will "prefer the crane's seraphic music in the etherial skies."

How could an American populace steeped in Puritanism, in frontier pugnacity and in Franklinesque pragmatism appreciate this zoological hedonist, this voluptuary of nature, this pioneer conservationist who saw land's reverential character as superior to land's usefulness? And how could a reading public beginning to glut on Gothic novels, which villainized the Indian as Satan's imp, accept Bartram's plea to respect these natives — "the most acceptable incense we can offer the Almighty as an atonement for our previous negligence?"

Bartram dared to touch the Indian with the same sensuous delight with which he handled and nibbled on his beloved plants and seeds, or faced the innumerable perils of his travels. Reading Bartram leads one to realize that the quality of fearlessness is not only a trait of great explorers and travel writers. It may also be the central attribute of genuine nonviolence and of a non-Puritan ethic.

And one goes on to wonder what a different nation we might have become if the minority opinion of the William Bartrams—their reverence for the green world and the natives who lived in it—might have prevailed over the Puritans' Manichean dread of nature.

ADDITIONAL READING
available in the PHS Library

The Travels of William Bartram edited by Mark Van Doren. Dover, 1955.

Travels through North and South Carolina, Georgia, East and West Florida by William Bartram. Facsimile of 1792 London edition, Beehive Press, 1973.

John and William Bartram's America; selections from the writings of the Philadelphia naturalists, edited by Helen Gere Cruickshank. Devin-Adair Co., 1957.

Botanical and Zoological Drawings by William Bartram, edited with an introduction and commentary by Joseph Ewan. American Philosophical Society, 1968.

The Travels of William Bartram; naturalist's edition, edited by Francis Harper. Yale University Press, 1958.

John and William Bartram by Ernest Earnest. University of Pennsylvania Press, 1940.

You can visit the home of William Bartram here in Philadelphia at Bartram's Garden, 54th and Elmwood Avenues, Philadelphia 19143. Call SA 9-5281 for guided tours.

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See page 3.

THE green scene

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THE
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HORTICULTURE IN THE DELAWARE VALLEY

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in this issue

Front Cover: An indoor garden room provides Cammy Foulks and her cat with play space. See story page 3.
photo by Steven Goldblatt

Back Cover: photo by Emund B. Gilchrist

AN INDOOR GARDEN ROOM

by Cathy and Edward Foulks

Cathy Foulk's interest in horticulture has been formed through her activities as a member of PHS, her volunteer teaching at the Schuylkill Valley Nature Center, classes at the Allen's Lane Art Center, and her work as a docent at the Morris Arboretum. She is a member of the Green Countrie Garden Club. Edward Foulks is an anthropologist/psychiatrist at the University of Pennsylvania and enjoys gardening in the indoor garden room.

Our indoor garden began eight years ago as a sunny outdoor courtyard between the house and garage, surrounded on four sides by stuccoed cement block walls. It measured about 30 ft. x 15 ft. and provided a natural protected area to place houseplants during the warm seasons. As our collection of houseplants grew and as we came to enjoy sitting amongst them to visit or to have lunch, the area became more and more a part of our living space. Many plants prospered and grew in this setting and for convenience we frequently put plants directly into the ground where they thrived. The task in the fall, before the onset of cold weather, became enormous. Not only did we have to carry in pots but dig up plants and put them in new pots as well, only to make a return trip in spring.

It was at this point that we consulted Joseph Distel, a designer and builder, about enclosing the area and providing enough heat to keep plants living throughout the year. The final plan involved spanning the 15 ft. from the house to the garage with 4-in. aluminum I-beams placed 3 ft. apart and covering the area with a flat corrugated fiberglass roof. A small gas-fired space heater (60,000 BTU) was attached to one of the roof beams in the corner of the room. Four Pella windows cut into the two side walls provided ventilation.

The design of the house and the wish for an unobstructed view dictated a flat roof. In addition, the slope of the roof of our home overhung the indoor garden area. We were therefore concerned that a glass roof might provide some dangers, particularly since several large oaks loom over the area as well. We also considered clear plexiglass; however, the contraction-expansion problems made sealing this kind of roof impossible. While corrugated fiberglass lacks the aesthetic appeal of clear glass or plexiglass it possesses advantages of strength and transmits and diffuses sunlight efficiently without creating undue heat buildup. The diffused light seems to allow every plant, no matter where in the garden, to receive light throughout the day, whatever the sun's position. Although the permanent roof can be opened in the summer, temperatures are usually the same inside the greenhouse as outside even on the hottest days, so we've never opened it. During the cold months, we set the thermostat at 50°-55°; however, frequently during warm, sunny days the temperature naturally ranges around 60° to 70°.

To provide a permanent area for sitting and visiting, we created a white cement teardrop-shaped patio in the middle of the enclosure. We decided to place tropical and subtropical plants directly into the ground around the patio. In order to increase the ground area for planting and to create a more aesthetic atmosphere, we installed stone and dirt terracing and embankments against three of the four walls. In one corner, the embankment is designed to accommodate a future waterfall circulatory system that feeds into a small pond where duckweed and water hyacinths grow at present.

continued

photos by Steven Goldblatt

1.

2.

Once planted, the fast-growing and flowering plants in this area require minimum maintenance. We water about twice a week during the summer with a garden hose on fine spray. During the winter months, only hanging plants, ferns and African violets are watered. The remainder of the greenhouse is kept humid by condensation formed on the fiberglass roof, creating a rain forest effect.

A special plot, however, is set aside for our favorite varieties of impatiens and geraniums, which are propagated to be moved outdoors in warm weather

continued

3.

Captions:

1. Cat on ledge overlooks giant bird's nest fern. Baby's tears continue up sloped bank to wall. Also pictured are poinsettia, *Gardenia jasminoides,* staghorn fern, begonias, *Dracena marginata,* spathiphyllum, *Maranta leuconeura,* a rosary plant *(Ceropegia woodi)* in the earthenware jug and a rubber tree. The rubber tree *(Ficus elastica)* reaching out to southern sunshine will be cut back to prevent blocking light. Cream colored stucco walls reflect light so the *Ficus pumila* vine running along it will be cut back when it gets too thick. Potted mums, paper white narcissus leaves, potted cyclamen and Rieger begonias round out the corner.

2. View of indoor garden from dining room.

3. Roll-out Pella window allows cross ventilation and a view of Valley Green woods. Winter light is brighter than summer because outside covering leaves have fallen; that compensates for cooler, drier climate. This corner houses impatiens, mums, geraniums, pittosporum, schefflera, zygocactus, Rieger begonia and violets. Grafted cactus in foreground. (Author shown)

Zygocactus truncatus

and back again to the greenhouse in late October.

This room has been a permanent green living area for the past three years. Most plants have been in place for that period. Double french doors open from our dining room onto the green room, and windows from the kitchen, as well as the family room (garage conversion), look into the area. The area has provided much enjoyment and has for the most part been problem-free. The only difficulty seems to be the overgrowth of plants. Small rubber trees *(Ficus elastica)* were pushing at the ceiling in just a few years. We constantly take cuttings from this plant to root and to give to friends. The cuttings keep the plants bushy and away from the ceiling. A soft cushioned carpet of baby's tears *(Soleirolia soleiroli)* has spread over every inch of open soil and provides a lacy background for the many other species growing here. Something seems to be in bloom in every season. Begonias, geraniums, and impatiens bloom most of the year. Poinsettia plants, which by now have become poinsettia bushes, come into red, pink, and white coloration for us in January and February. African violets do especially well in the early and late autumn. Gardenias bloom in the spring as do permanent paper white narcissus, bridal wreath *(Spiraea prunifolia)*, varieties of tradescantia, and butterfly orchids. Blooming in November (when this article was written and the photos taken) were white lavender-pink zygocactus *(Zygocactus truncatus)*, kalanchoe, Rieger begonias, geraniums, impatiens, chrysanthemums, African violets, and several *Anthurium spathiphyllum* spikes near the pond. Ferns do especially well in the area. A bird's nest fern *(Asplenium nidus)* has become approximately 5 ft. high; however, other varieties have also done well, such as the staghorn fern *(Platycerium spp.)*, bear's foot *(Aconitum napellus)*, maidenhair fern *(Adiantum sp.)*, asparagus fern *(A. sprengeri, A. plumosa)* and others. Near the kitchen grow avocado, grapefruit, bean, and pineapple plants placed there after a meal by our children. Rosemary *(Rosemarinus officinalis)* does especially well and furnishes a year-round fragrance especially if some stems are broken and used for the occasion; the heady aroma rewards the whole house during a meal. Insect pests and slugs have not been a major problem though we rarely spray the area since it is living space for us and for our cat.

With rather simple design and inexpensive conversion costs, this area has been transformed into an indoor flowering tropical garden, which provides our family and friends with pleasure throughout the year.

A Monochromatic Garden

With misgivings the Vollmers accepted a plan for their Baltimore garden that drastically changed their small landscape.

photos by William L. Klender

The Volmer garden in Baltimore. Fountain grass *(Pennisetum setaceum)* to the left center; in the foreground, black-eyed susan *(Rudbeckia hirta)*.

by Amalie Adler Ascher

Amalie Adler Ascher writes for the Baltimore Sunday *Sun* and is author of *The Complete Flower Arranger* (Simon & Schuster, N.Y., 1974).

Geraniums, Mugo pine behind pot, giant miscanthus on right. Avena grass behind sculpture.

The garden has been designed with the sun in mind. To highlight leaves and to illuminate branches. It's a sheltered place where one can while away the hours, where birds have been made to feel welcome, where a nun comes to meditate. It's a homey place that invites you to pull a weed on your way to empty trash, to snip a branch as you leave for the day's activities. It's a pampered place that never wants for attention.

"The garden changed my life," says Pauline Vollmer. "My day isn't compiete unless I've made my rounds at least twice—once after breakfast and again after walking the dog. In good weather, I spend an hour or so watching the birds and noticing plants to see what needs doing. Leo's love is the pond and the fish."

In summer, the Vollmers relax outside every evening before dinner. Their chief problem then is deciding where to sit. One time they'll pull up chairs by the small circular pool, another alongside the larger rectangular one. Sometimes they move back under the trees where it's shady. When visitors come, they almost always head for the water, drawn by the cool sound of its splashing over rocks, its hypnotic movement. Water upstages all other features.

Unlike many other landscapes alive with color, theirs is mostly monochromatic, restfully green. Flowers when they do appear take a back seat popping up only casually in pots or confined to one spot. Yet a mass of yellow black-eyed susans *(Rudbeckia hirta* 'Goldstrum,' an improved cultivar) departs little from the earthy scheme; orange geraniums seem merely to lengthen the sun's rays.

The Vollmers try not to leave their garden even for vacation. There's sightseeing enough at home. In their absence an unexpected bird might decide to build a nest or a bush push outward in an uncommon direction. "Why go away when there are dogwoods in spring, the rustle of grasses in summer, the movement of branches on a frosty winter night," Pauline Vollmer wants to know.

"The concept of the garden," Mrs. Vollmer explains, "its emphasis on varieties of leaves, textures, the patterns of growth departs from that of others dependent on color for effect. If you're familiar with the work of Wolfgang Oehme, our landscape architect, you'll recognize his hand immediately. His is a different style though it takes some getting used to at first," Mrs. Vollmer admits. "Now, that we've adjusted, we wouldn't trade it for any other."

She remembers the half-acre property the way it used to be — flat rectangular lawn, dull foundation planting, some hybrid teas, a shrub border —and shrugs. "I knew something was wrong but I couldn't quite put my finger on it. It wasn't till I took some courses in landscape design and became a landscape critic that I realized I couldn't live with the place any longer. After a friend told me about Wolfgang, we asked him to have a look and suggest improvements just for a corner at the back as a starter. But, truthfully, we had no idea what we wanted.

"We did hope to eliminate the lawn (a time-consuming and expensive chore), and I needed a place for my 60 pet hybrid teas. We thought of having a natural feeling with easy-to-manage plants but decorative any time just the same. Water and fish were first on my list; Leo was anxious for birds so we needed trees and shrubs for them. An order like that was right up Wolfgang's alley. But the revisions he proposed were so drastic, Leo and I rejected them. Then, despite our misgivings, we went ahead anyhow."

What changed their minds is hard to say. But eventually a strange-looking perennial bed was constructed. It was larger than any Pauline Vollmer had ever seen and it jutted out in such a way that instead of curving, it came to a point. For awhile she lived with it, tending her roses and other flowers in what soon became an increasingly unpleasant duty. There was the perpetual spraying; the constant dead-

Pauline and Leo Vollmer enjoy their garden in the evening. Tree is *Maackia amurensis.* Grass in front of Mrs. Vollmer is avena.

Tall grass *(Erianthus ravennae),* calamagrostis, climbing beans, in the rear.

heading of blossoms; the pond, the last to be added, as yet to be built. But when that day came and the first of two pools was in place, it put an end to the roses. For pesticides and fish simply don't mix. The ill-fated perennial bed gave way to a patio. And the pool was adorned with water lilies in tubs, native pickerel weed, water iris, sedge grasses, and arrowhead lilies, all without containers.

Were you passing the white frame house on the quiet street in Baltimore's Murray Hill, chances are you wouldn't look at it twice. The neat, well-kept grounds fit in with the prosperous neighborhood. Nor would you dream what's concealed in back. But that's the way things are supposed to be. The setting in front has in a sense been designed in reverse: it shows to best advantage from the inside, arranged for viewers looking out.

the author visits

The first thing I notice on a visit is the ivy around the doorway, a kind I haven't seen before. The leaf is larger. Mrs. Vollmer identifies it as Algerian ivy *(Hedera canariensis).* "It's a slow grower," she explains, "more easily controlled. And though not generally hardy in this climate, it looks fine despite last winter." Hollies by the house seem out-of-the-ordinary, too, with a rich sheen, no spines, and "red berries suspended on strings like Christmas balls," as Mrs. Vollmer likes to describe them. They're so pretty, I ask the variety. "It's long-stalk or *Ilex pedunculosa;* I like it for its resistance to leaf miner and other diseases. The berries must taste good, too, as birds seem to like them," she answers wondering why more people don't grow it. She adds that there are no hybrid hollies in the garden since birds don't care for them preferring the American variety instead.

. . . eventually a strange-looking perennial bed was constructed. It was larger than any Pauline Vollmer had ever seen and it jutted out in such a way that instead of curving, it came to a point. For awhile she lived with it, tending her roses and other flowers in what soon became an increasingly unpleasant duty.

Underfoot, groundcovers of bergenia, liriope and fern spread a dense green carpet and choke out weeds. There is also epimedium, a little-known herbaceous perennial excellent in full sun or shade with dainty yellow flowers and pale-green, heart-shaped leaves. It increases so rapidly that Mrs. Vollmer thins it every three years, and so thickly does it grow that she never need rake it. Sedum has been interplanted too. "It cuts down on housekeeping much better than mulch that would be kicked onto the walk by the birds scratching for worms," she mentions in passing. We turn next to plumbago, another profuse grower that provides an old-fashioned blue flower from July till frost, then dies down in winter. Other plants she favors include Solomon's-seal *(Polygonatum spp.),* wild ginger *(Asarum canadense),* sassafras *(S. albidum,* she likes the mitten-shaped leaf); photinia, fringe tree *(Chionanthus sp.),* and the fascinating macleaya or plume poppy *(M. cordata)* that grows to tree-like proportions, short-lived during summer and rejuvenating the following season. And then there are daffodils, lots of them, more than 100 varieties.

She points out *Carex sp.,* a low-growing ornamental grass that moves lazily in the breeze. It has been used to soften hard surfaces and is but a taste of more waiting around back. For grasses are the melody of the garden; they make it sing.

But I have been so intent on individual plants that I've missed the point of the whole front design. Mrs. Vollmer speaks up. "You'll notice the bay windows are actually quite close to the street. At dinnertime, we had as much privacy as living in a goldfish bowl; it got to the point that Leo and I felt people outside could see what we were eating. And for us there was nothing to watch but passing cars. We didn't want curtains, so it became Wolfgang's

continued

Heather and creeping thyme set off the festuca. To the right is yucca.

Horticulturists, students, magazine photographers, hobbyists come from everywhere just to see the variety.

assignment to devise a screen." She gestures to demonstrate. "He came up with this double border idea. It's two rows of foundation planting, you might say. They're set far enough apart to enclose a sort of room divided with a walkway of blue stone that leads to the garage. The shrubs by the house make *its* setting; those nearest the street give us *our* view. After living with the arrangement, we found it opened up space. It was as though the house itself had expanded and taken in the out-of-doors. Our next step was to replace the french doors with the sliding glass type to carry the feeling of spaciousness through to the back."

For five years, the Vollmers kept adding bits and pieces, each section when completed a prelude to the next. Mrs. Vollmer walks to the beds lining each side of the property behind the house. They've been planted with giant blue leaf hosta (good for cutting), heartleaf ox-eye *(Buphthalum grandiflorum)* with yellow daisy-like flowers, pinky-purple heather and astilbe, feathery-white cimicifuga or fairy candle, grasses and more ferns, with several of each kind grouped into masses. To vary height other plants stand tall; shadbush, yews, cunninghamia (common China-fir), fringe tree, *Aralia spinosa* or the pesky devil's-walking stick, pyracantha, *Magnolia grandiflora, M. virginiana,* and golden-rain tree *(Koelreuteria sp.)*. But the one essential ingredient common to most is berries, Leo Vollmer's concession to the birds. For as both the Vollmers are keenly aware, birds make a big difference in the insect population; the more birds, the less the need to spray. They have added other enticements, too, such as liberal amounts of organic matter worked into the soil that in turn produce grubs. One more morsel for the goldfinches, cuckoos, rose-breasted grosbeak, house finch, Blackburnian warbler, and the rest. "We even put up with their mess on the porch," Mrs. Vollmer says affectionately.

No matter what the season, day or night, the Vollmers' garden never loses appeal. Chinese witch-hazel *(Corylus chinensis)* blooms in February followed by winter-hazel *(Corylopsis sp.)* in very early spring. Needled evergreens clothe the landscape in a furry coat year-round punctuated in winter by starkly pointed blue yucca leaves, the corky gray bark of winged euonymus *(E. alata)*, the silver gleam of white birch, the patina of *Camellia sassanqua* bringing pre-Christmas bloom. And so they wouldn't miss out at night, the Vollmers have even more spectacular effects in the dark as spotlights aided by the moon shine on tree trunks, patterns of branches, a flowering shrub at its peak, or shed a warm glow from behind. Rain and snow enlarge the range.

Though there is much to recommend in the garden, it is the ornamental grasses that have put it on the map. Horticulturists, students, magazine photographers, hobbyists come from everywhere just to see the variety. "We have 12 kinds," says Mrs. Vollmer, "and that's a fair amount." Some of the very tall ones growing to as much as 10 ft. include: avena, a member of the oat family with blue foliage; old-fashioned pampas and giant miscanthus; pennisetum *(P. setaceum)* or fountaingrass with cattail-like blooms from early August till winter; arundo *(A. donax)* or giant reed which Mrs. Vollmer doesn't fertilize and cuts to the ground in fall to reduce leaf clean-up; calamagrostis with a fine-green leaf and bloom through the summer; and *Erianthus sp.* whose bloom is spectacular. In the short category are blue fescue; phleum, a small cushion-type with grey foliage and tiny fuzzy blooms; elymus or wild rye; and more varieties of carex.

None of the grasses is too fussy about soil; most tolerate some shade. But besides their character, what Mrs. Vollmer really wants you to notice is their arrangement. "Normally, each is placed alone. But here, Wolfgang has used large groupings to make the patterns that distinguish the garden. He's brought space into play, too.

"Isn't it remarkable what one can do with just foliage?"

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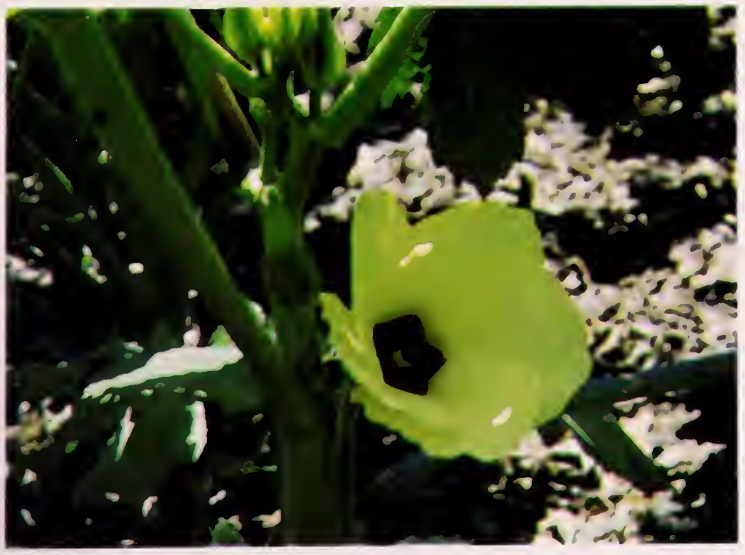

photos by author

THE VEGETABLE GARDEN:

The Long and Short of It

by Jane Pepper

PART I THE LONG: Okra and Ozone

Growing vegetables in suburban Philadelphia has a special charm to a transplant from the cool, damp, windy shores of Eastern Scotland. To be sure, my parents, who live in a small village close to the North Sea, enjoy peas and head lettuce in mid-July, but they cannot experience the excitement of growing vegetables such as eggplants, lima beans and okra that need a long, hot summer to prosper. My husband, a native Philadelphian, was the first to suggest we grow okra. His fond childhood memories of this "glorious" vegetable did not prepare me for the slimy mess I produced when I cooked our first picking. I could not afford to dislike it, however, since we had to eat okra almost every night through August and September to consume the enormous crop.

Written last spring, these words now sound so overconfident, so naive. My plan, as I finished the article in April, was to let it sit over the summer while we planted, harvested and made additional notes on this "wonder" vegetable. Come fall I would simply pull the article out, revise a few phrases, and mail it to the editor of the *Green Scene*. It didn't even cross my mind that the okra crop of 1977 would be small, not to mention a near disaster.

Not able to find any reasonable explanation for this strange development in my home library, I sought help from Dr. Myron Sasser, plant pathologist at the University of Delaware. He just nodded as I described the symptoms: brown leaves, which eventually dropped off leaving rows of naked, podless stems. His diagnosis for the catastrophe was simple — air pollution. In fact he has given up growing okra in Delaware for this reason. Since we had a spell of very hot, stagnant weather in July, which coincided with the beginning of the decline of our okra crop, this explanation satisfied me for a while. Now I only had to consider whether we should risk another disaster or follow Sasser's example and give up growing okra.

Still contemplating my options I visited the Philafarmers Harvest Party in the middle of September. To my surprise I found about 30 entries in the okra class. The judges even commented that the many excellent entries made it hard to select the winners. So much, I thought, for Sasser's simple explanation. If they can grow fantastic okra in the center of Philadelphia it just doesn't make sense to have such a disaster in suburban Media.

Once again the good pathologist heard me out. This time he explained the problem in more detail. Ozone (O_3), the culprit in this case, is formed from the combination of oxides of nitrogen and oxygen in the presence of ultraviolet light. Auto exhaust is a primary source of oxides of nitrogen. However, since a great deal of ultraviolet light is required to catalyze this reaction, the ozone is not formed until the materials have traveled a substantial distance from the original source while being exposed to ultraviolet light. The direction in which they travel depends on the prevailing wind. Finally I understood. And now we are still left with the dilemma: should we try again this year. Since my sister-in-law, who lives a scant five miles from us, had a fantastic okra crop in 1977, we plan to gamble on 1978. Should you wish to do the same you may find the following information helpful.

planting

As with other vegetables that grow best in hot weather, okra should not be put in the ground until the soil is thoroughly warm. Generally we sow it as a second crop around Memorial Day to follow lettuce, spinach or beets. The seeds, which we soak in water for 24 hours to speed germination, are about 1/8 in. in diameter and Army camouflage green in color. We sow these 3 in. apart with 2½ ft. between rows, and cover them with ½ in. of soil. A one-ounce packet of seeds will sow a 50-ft. row, and since okra seeds will remain viable for five years we save the leftovers. Germination takes 10 to 14 days, and once we have a good stand of plants we thin them to leave 18 in. between plants.

Given full sun and ample water the plants begin to flower about 50 days after sowing. As its scientific name suggests, *Hibiscus esculentus* is closely related to the ornamental hibiscus and the flowers are almost as decorative. They are born in the leaf axils and resemble bells, each one composed of five petals. The upper portion of each petal is a pale lemon color. The bases, however, are maroon, as is the large prominent stigma. Opening in the morning the flowers are dead by nightfall, and within a day you can see the green

continued

edible pods developing. These are grooved, and tapered at one end. Growing out of the leaf axils they resemble candles in candlesticks. At maturity they will be 7-9 in. long, but you should pick them about 5 days after flowering when they are 2-3 in. long and free of fiber. Once the plants begin to fruit you must keep picking the immature pods. This will probably mean picking every other day; to allow the pods to mature decreases the yield.

Several varieties are recommended by seed companies. Our experiences have been with 'Clemson Spineless,' and being satisfied customers until last year we have to date tried none other. This year, however, we plan to try 'Perkins Mammoth Long Pod.' From the experiences of a friend who gardens near Kennett Square, we believe this variety may be less affected by air pollution.

Since my first experiments with okra in the kitchen I have learned that the slime that appears during cooking is valued by those who use this vegetable in stews and soups. The mucilage that surrounds the white seeds in the pod acts as a thickening agent. Thus many cooks, especially in southern states, make delicious chicken gumbo or "Creole" dishes for which okra is a necessary ingredient. We generally eat it "straight," or in a casserole with other vegetables that are abundant at that time. When I cook it "straight" I leave the pods intact and drop them into boiling water for five minutes. Leaving the stems on the pods during cooking reduces the amount of mucilage and makes the vegetable more palatable for okra initiates. After cooking I either remove the stem ends and serve the pods with melted butter, or leave the ends on and we dip each piece into Hollandaise sauce. When I combine it with other vegetables such as tomatoes, peppers, onions and eggplants that are available in August and September, I generally use the recipe listed at the end or some variation of this, depending on which vegetables are most plentiful.

We have also found that okra freezes most successfully in a casserole or alone, in which case I blanch it in boiling water for one minute. Some gardeners allow the pods to mature and dry the seeds to use in soups during the winter.

origins

There seems to be general disagreement on the origins of this edible hibiscus. Some say it is Asiatic in origin, others say it is native to Central or South America, and Donald Wyman plays safe in his *Gardening Encyclopedia* with "native to the tropics of the Old World." Vernon Quinn in his delightful book *Vegetables in the Garden and Their Legends* is also vague on the okra's origins, but states that its recorded history begins with a Spanish Moor, Abul-Abbas el Nébati, born in Seville in the twelfth century. Abul-Abbas was a physician learned, as was the custom in those days, in botany. In 1216 he visited Egypt and brought home seeds of the plant with green pods that he had seen the Egyptians eating as a vegetable. The Arabian name for this plant was uekha, from which comes its present name, okra.

A few centuries later, according to Quinn, English traders brought seeds of the same type of plant home from the coast of West Africa where the natives called it ki-ngombo. From this name comes the English adaptation, gumbo. Yet another common name I discovered from a friend who lived in Malaysia — there they call it Lady Fingers.

Call it what you like, but why not join us and gamble on a good okra crop in 1978. Afterall, this was our first failure in five successive years of heavy production. And if you have rows of naked stems by August you can always rip them out and plant carrots, spinach or some other short-season crop that would mature before frost.

SUMMER STEW

1 large eggplant	6 tomatoes
2 onions	3 tbsp. butter or margerine
1 clove garlic	basil and parsley
20 okra pods	

1. Peel eggplant and cut into ½-in. slices. Place slices on paper towels and sprinkle with salt. Leave for ½ hr. (Salt draws moisture out of eggplant and improves the taste.)
2. Melt butter in casserole dish or heavy skillet with lid.
3. Chop onions and crush garlic. Saute them together in butter till translucent.
4. Remove stalk and blossom ends of okra pods and slice in half.
5. Mop eggplant with paper towel and cut slices into ½-in. squares.
6. Add both eggplant and okra to onion. Saute 5 min.
7. Peel tomatoes. Remove seeds and juice. Chop remaining meat. Add to mixture.
8. Salt and pepper to taste.
9. Add herbs if desired.
10. Cover tightly and simmer till okra is cooked — 15-20 min.

If you are overrun with zucchini during the okra season you can also add this to the stew.

PART II THE SHORT: Early Salads

Our attitude towards the vegetable garden in early May used to be one of mixed emotions: excitement because of the visible progress of many vegetables, but this was tempered by a diet confined to asparagus and rhubarb.

Last year we added variety by sowing spinach and mustard greens on March 26th and enjoyed our first garden salad on May 8th. As an early crunchy salad, green spinach is hard to beat. Last year we planted both 'Bloomsdale Longstanding' and the new hybrid 'Melody.' The former had gone to seed by May 27th, but 'Melody' hung on for an extra week.

Mustard also has a tendency to go to seed, but small successive sowings throughout the spring and summer ensure a continuous supply from May till frost. Once it gets older it is very hot if eaten directly out of the garden, but dress it with oil and vinegar and you will enjoy the pungency. 'Fordhook Fancy' and 'Tendergreen' are both mild varieties.

With both greens we plant the seeds in wide (6-9 in.) bands and make our first salads from the thinnings. A 10-ft. row of mustard and a 20-ft. row of spinach keep the two of us as well as occasional visitors well fed until the peas and leaf lettuce are ready around the third week of May.

Jane Pepper is currently working on a Master's Degree at the University of Delaware in the Longwood Program in Ornamental Horticulture. She gardens in Media.

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photo by author

LEEK: A WINTER VEGETABLE

by Thomas Buchter

The choice of vegetables for the home garden is almost unlimited and a great deal of consideration is usually given to spring and summer vegetables. The first frost in fall often signals an end to the productivity of the vegetable garden for six months. By using winter hardy vegetables we can extend the productivity of the garden up to 12 months.

One of the most versatile and dependable of the hardy vegetables is *Allium porrum* and its cultivars commonly known as the leek. A biennial member of the onion family, it is grown for its blanched underground portion. Leeks have been in cultivation since ancient times and are still quite popular in Europe, never quite receiving the same attention in this country.

Leeks are readily grown from seed that is available from the larger seed houses. Sowing can be done indoors and transplanted to the garden or sown directly into the garden and then thinned. I prefer to sow seed sparingly in a seed flat to avoid transplanting crowded seedlings into individual pots before going into the garden. Sowing takes place about the middle of March on a windowsill or greenhouse where the seedlings stay until they all germinate. The seedlings are then moved to a cold frame where they remain until mid- or late April. Plants put into the garden too early will not grow well until soil temperatures have warmed sufficiently.

Preparation of the soil is most important for the successful cultivation of leeks. It should be a rich friable soil that is deeply tilled to a depth of one foot with plenty of organic matter. As with root crops it is most important to stay away from fresh manure.

Rows should be about a foot apart; excavate soil for a 5-in. trench and plant the grasslike seedlings 3 in. apart in the bottom. Water by flooding the trenches and fertilize as the seedlings begin to grow. At this time it is important to keep up with the weeding as the slender seedlings will be quickly lost among the weeds. Slowly fill the trenches with soil as the plants become larger to blanch the lower portion of the plant. When they have been filled, the earth between the rows should be hilled up against the leeks. Final hilling and feeding should be done in midsummer; mulch can then be applied to keep the soil moist and weeds down.

Leeks can be left in the open ground and used until the ground freezes and then used again in spring when the ground thaws. I prefer to cut back the foliage toward the end of December for easy handling and then cover the rows with 3 ft. of tree leaves to keep the ground from freezing. Mark each row with a stake to indicate location of the row and where the remaining plants are. If rows are not marked it becomes difficult to find the remaining plants under the leaves and snow. When the spring thaw begins, remove the mulch and any dead or decayed leek foliage.

Leeks are basically insect and disease free; however, a fungus sometimes attacks the plant. It is a soft rot carried on debris from previous crops, hence the need for sanitation in the garden. The insect that causes the most damage is a small caterpillar that bores into the blanched portion of the stem not only disfiguring the plant but damaging it beyond use. Severe damage is recognized by the twisted growth of the leaves.

By attending to the few basic cultural needs of leeks it is possible to have a good supply for the entire winter and early spring. With proper planning the leeks can be taken out of the garden in time for the summer vegetables thus making efficient use of garden space.

Thomas Buchter is the associate director of the Henry Foundation.

Robert Armstrong of Longwood is shown with an unnamed hybrid that will be released in 1979. The plant was bred for its size, blooms and compactness.

Longwood Gardens Photograph

IMPATIENS TO GROW - IMPATIENS

Seventeen years ago I grew my first impatiens plants outdoors. At that time our house was bracketed by 170-year-old maple trees, which necessitated a shady garden. I loved the impatiens at first bloom; and from early June until the first heavy frost they bloomed continuously. I learned over the years to extend the blooming time of the impatiens into late October by covering the plants with newspaper on those fall evenings when a light frost was forecast.

Impatiens belong to the family *Balsaminaceae*. They have many common names such as touch-me-not or busy lizzies. The name is derived from impatient and refers to the elasticity of the valves of the seed pods, which discharge the seeds when ripe. In the 18th and early 19th centuries, cuttings were handed from one gardener to another and a deserving strain was passed down from father to son and traveled the entire country.

A very attractive impatiens is *Impatiens sultani,* the Zanzibar balsam, patience plant, or sultana, a plant with fleshy stems and branches 1-2 ft. high. The flowers vary from rose-red to white through pink, rose, salmon and rose-purple. This plant flowers more or less continuously throughout the year. *I. sultani variegata* has gray-green leaves irregularly bordered with white and carmine red flowers.

Impatiens holsti, from East Africa, resembles the Zanzibar balsam in habit of growth and has red flowers. Since its introduction early in the 20th century, numerous hybrids displaying a wide range of pleasing colors have been raised between it and the Zanzibar balsam. The collection of new varieties continues to the present. The newest type commercially available are the New Guinea impatiens, some of which have a variegated foliage. As the interest and demand for impatiens increase,

photos by Edmund B. Gilchrist

New Guinea impatiens hybrid 'Showboat.'

New Guinea impatiens 'Fortune Teller,' right; 'Magician,' left.

New Guinea impatiens hybrid 'Showboat.

by Joanne C. Marano

TO BLOOM

more and more hybrids are developed.

Over the years, I have found that white flowered impatiens gives the best contrast at night against shrubbery. The colors, with the exception of the light pinks and salmons, tend to merge into the background, a point to consider if the plants are to be viewed at night on the terrace or in the garden. It's also true of hanging baskets. With careful selection of varieties it is possible to plant almost any style container with impatiens, even a strawberry jar. The baby series would be best for a strawberry jar. Compact self-branching impatiens such as 'Imp,' 'Grand Prix'

continued

and 'Twinkles' are recommended for baskets and pots of all types.

Remember that any plant grown in a container versus those used as bedding plants in the garden will need careful monitoring for watering and fertilizing. Container plantings should be checked each morning and late afternoon. As a general rule they will need to be watered each day perhaps a second time if it has been sunny with a good air current stirring. I give all my plants a weak solution of fertilizer with each watering during the growing season (Peter's water soluble fertilizer 15-10-30).

developing the best impatiens

The United States Department of Agriculture, private horticultural foundations, and seed companies continue to develop and improve the varieties of impatiens offered to nurserymen and to the general public. In 1970 an expedition to New Guinea, Java, and the Celebes Islands, jointly sponsored by Longwood Gardens and the USDA, collected specimens of impatiens growing in those areas. The New Guinea impatiens hybrids are the result of the research sponsored by the USDA, Longwood Gardens and several other private institutions. Dr. Robert J. Armstrong, geneticist in charge of research at Longwood Gardens, Kennett Square, Pa., has developed two series of New Guinea hybrids, which have already been released to commercial growers. There are other New Guinea impatiens hybrids developed at Longwood that are as yet unnamed and according to Armstrong will not be ready for release until 1979. The New Guinea impatiens hybrids will be on display at Longwood in the outdoor gardens from May through frost and in the conservatory areas September through mid-April. When on a visit to Longwood Gardens, stop at the information booth for their exact location in the seasonal displays. Photos and a description cannot do justice to the beauty of their flower color and foliage.

I have found that the New Guinea impatiens hybrids do best in a sunny exposure. When grown in the shade they fail to thrive, the foliage is not as variegated and they did not bloom for me. I was disappointed in the blooming pattern of the six New Guinea hybrids that I grew from June until December.

photo by Edmund B. Gilchrist

New Guinea impatiens hybrid 'Patriot.'

It was not until late September that the two plants with large green and cream foliage finally bloomed with large white flowers. They had four flowers between them for the Harvest Show. They were placed in the greenhouse after the show in a sunny location and have continued to bloom. They are now very attractive plants in 6- and 8-in. pots. The other four plants having pink, cream and green foliage with red stems showed no bloom, and I decided to cut them back in early December. I cut two plants back to within 2 to 3 in. of the pot. When I went back to prune the remaining two plants the next day, I was amazed to see one very large pale pink bloom on each plant. There was no evidence of any other bud formation.

As the New Guinea impatiens hybrids are from a tropical or subtropical area where the plants are normally exposed to only 10 hours of daylight versus the 12 to 16 hours common in the temperate zone during the growing season, their blooming pattern can be affected. Such plants often will not flower if brought to a long day region, or will delay flowering until the waning daylight promotes it. Armstrong has conducted experiments involving temperature as the determining factor in the blooming habits of the hybrids. His results at this time indicate that cooler temperatures tend to initiate bloom.

Certainly when sold to the home gardener, there should be some notation as to when bloom can be expected. While these plants are attractive even when not blooming, personally, at this time, I would not recommend them for mass plantings where bloom is expected or desired. The variegated foliage hybrids would make an interesting display even without bloom.

In late November, I obtained other cuttings of the New Guinea impatiens hybrids which have continued in full bloom. The colors and flower size are spectacular. I plan to grow them again this summer in several locations both as bedding and container plants. By enlisting the help of several gardener friends in several different states, I hope to discover which varieties do best.

As container plants, they appear to

need more water than the conventional impatiens varieties grown in the same general location.

Because of their variegated foliage, several commercial growers suggest growing the New Guinea hybrids as house plants. That does not appear feasible as they need a sunny location and seem to be prone to red spider infestation. I personally have never found impatiens to be a good house plant. I've only succeeded in growing mature plants in the house in a cold, sunny location with very careful attention to watering. It was a much colder area than would generally be used for house plants and holds only for mature plants not seedlings.

'Fancy Frills' are the double flowering impatiens introduced several years ago. I have found them to be very showy. They produce rose-like blooms in five or six shades. They are used as basket or pot plants. They have periods of heavy bloom, followed by a semi-resting stage. A heavy rainfall tends to knock off the open and semi-open blooms. There is an older non-patent pink double impatiens whose blooms are not as large as 'Francy Frills' but they have more staying power. There is also a small-flowered pale salmon pink impatiens which I usually refer to as Chestnut Hill pink. Both these plants are only grown from cuttings by one or two small local growers.

While these plants are attractive even when not blooming, personally, at this time I would not recommend them for mass plantings where bloom is expected or desired.

Over the years the taller varieties of impatiens have fallen out of favor with the commercial growers. It has become most difficult to obtain really tall impatiens 2½ ft. to 3 ft. and over for background plantings.

propagating

Take cuttings of impatiens at any time of the year and place in sand, vermiculite or perlite in a warm propagating bed or flat. They may also be rooted in water. I prefer perlite because it drains better. When planning to propagate impatiens or any plant material that will be used to grow outdoors, it is best to have the cuttings or seedlings ready as close as possible to the time they are to go outside. Plants inside for too long a time usually become spindly and weak. Take your impatiens cuttings with a side shoot or branch not just a leaf; cuttings without a side shoot usually do not branch. They grow straight up and don't develop into compact plants. If purchasing impatiens seedlings from a nursery, do not plant them outside until June 1st. Young plants are very susceptible to a cold night or a light frost. It is preferable to transplant them to 3-in. peat pots or clay pots. They can then be put out on warm sunny days and taken inside if it turns cold.

If you plan to take impatiens inside at the end of the season, plant as many plants as you will need in 4-in. clay pots and sink them in your flower beds, It is much easier to handle a plant with a contained root system than to dig up a large plant in the fall. You can also place several shallow clay pots filled with potting soil under the mature impatiens plants in your flower beds. The plants will discharge their seeds and some of them will germinate in your pots. Impatiens seeds will winter-over in your garden. They will germinate in early July if the beds are not disturbed; however, they do not flower until late summer. The random germination accounts for the colors you did not plant appearing in the flower bed. The impatiens will also self-sow in the greenhouse. I have many lovely plants that have survived there for years. One variety grows to a height of 4-5 ft. with large salmon pink flowers.

growing impatiens from seed

To germinate, impatiens seeds need bottom warmth. Your ability to provide this warmth is probably one of the most important factors in the success or failure of your project. Use a sterile medium: potting mix and/or finely milled sphagnum moss. Seed flats should have holes for drainage or I have used plastic shoe boxes with 2 in. of coarse perlite topped with the growing medium. Sow the seeds on top of the moistened medium. Water lightly with a sprayer; then cover with clear glass or plastic. Place containers where they will have bottom heat. They should be started indoors six to eight weeks before the last frost is due. As suggested with seedlings purchased from a nursery, transplant into 3-in. pots and then into their permanent pots or the flower bed.

As you can see, impatience will not do with impatiens; care will.

Impatiens that should be available as seeds and/or seedlings for spring 1978:

1. F1 Hybrid Futura Series. Produces more color than either the dwarf or the taller types. 1½ to 2 in. flowers on 8--10-in. plants. Medium compact habit.
2. F1 Hybrid Elfin Series. The outstanding attribute of this series of impatiens is its dwarf habit that carries on into the season, plus good self-branching, as well as high germination.
3. F1 Hybrid Ripple Series. Large 2-in. flowers, medium dwarf habit, self-branching, early flowering. All are variegated with white.
4. F1 Hybrid Twinkles Series. Ultra dwarf, compact 8 in.; very early flowering with the most uniform striping of any bicolor.
5. F1 Hybrid Grande Series. The first dwarf, large-flowered impatiens to be introduced. Has bold colors.
6. Zig Zag is a hybrid blend of bicolored varieties that should be grown in semi-shade.
7. A-Go-Go is an F1 hybrid of red and white variegation in many combinations. Has a spreading habit.
8. Dwarf Baby Series is earlier blooming and smaller than other strains, small leaved and base branching. Very good for strawberry jars.
9. Gem F1 Hybrid. Can be grown in sun as well as shade. Possesses a uniform dwarf spreading habit, about 10 in. high and 20 in. across. Early and free-flowering.
10. Fantasia Series has a good dwarf habit, large blooms; does well in morning sun.
11. Tangeglow. Vibrant tangerine-orange color. Excellent for shady spots and will bloom freely until frost. Showy in urns, tubs, and baskets. Height 15 in.
12. Fancy Frills Double Flower impatiens must be purchased as plants from a nursery.
13. Cyclone Hybrids must be purchased as plants from a nursery.
14. New Guines Hybrids must be purchased as plants from a nursery.

New Guinea impatiens hybrids will be available at Wyndover Nursery and Fort Washington Garden Mart summer 1978.

Joanne Crouse Marano and her family received the 1977 PHS Gold Medal Certificate for skill in horticulture; they were also the 1977 Flower & Garden Show Horticultural Sweepstakes winners. After an education in nursing and later graduate training in education, Marano attended classes at the Arboretum of the Barnes Foundation. She teaches container gardening at Cheltenham Adult School and lectures to garden clubs.

Mrs. Casper Wister inspects her garden at Dunwoody Village. In bloom are shasta daisies, marigolds, and day lilies.

photos by Edmund B. Gilchrist

Another view of the Fairchild garden. The pale flower climbing the fence is clematis; flowers in foreground chrysanthemums and container plants are petunias. Frances Fairchild is the sculptor.

Mr. Whitney prunes the Clematis 'Romona.' The flower border includes floribunda roses, chrysanthemums, petunias, ageratum and impatiens. The concrete terrace has been painted to simulate the terrace around it.

THE NOT SO RETIRING GARDENERS AT DUNWOODY VILLAGE

by Louisa N. Whitney

photo by Edmund B. Gilchrist

Charles Howard waters his atrium. Impatiens and geraniums bloom around the terrace; a collection of herbs in the center island.

The completion of Dunwoody Village in early 1975 and its occupancy by the residents, who averaged 75 years of age, presented a unique opportunity for such a group to demonstrate their imagination and knowledge of horticulture by establishing small gardens connected to their apartments.

A great many of the residents had tended fairly large gardens at their former homes and had expected, when they came here, to give up gardening and relax. But before the snow was off the ground they were eagerly planning their mini-gardens. The eager beavers formed a Garden Committee, which has grown not only in numbers but in the scope of their activities.

Once a few choice gardens neared completion the fever grew and many were inspired to emulate their neighbors' efforts. Now a variety of concepts are represented. The design, provided by the architect, Henry Mirick, a former president of the Pennsylvania Horticultural Society, included small identical concrete patios for each apartment. Many of the residents enlarged and altered the shape of theirs, using brick or flagstones. The gardens vary some-

Louisa N. Whitney has been a PHS Council member and chaired the Flower & Garden Show Horticulture Committee. She is a former director of the Garden Club of America and has chaired many important committees of GCA. Ms. Whitney was also a member of the Board of the Pennsylvania School of Horticulture for Women (now Temple University, Ambler Campus).

what in size but in general are about the area of the amateur gardens in the Philadelphia Flower and Garden Show.

In spite of the similarity of the apartments or "country houses" each garden has its own individuality. Some have woven wooden fences with espaliered dwarf fruit trees and beautiful clematis vines while others have interesting hedges separating their gardens from their neighbors.

One woman living in a corner apartment built a greenhouse onto the wall. Another gardener built a little stone wall planted with succulents. The woman collected all the rocks for the wall from the bank of a stream on the property. The stones were too heavy for her to carry such a distance, so on her walks she deposited them one by one halfway home and collected them the next day. This feat entailed months of hard work.

Some of the attractive balcony apartments specialize in container gardens; for example, a vegetable garden flourishes on one with patio tomatoes and window boxes containing lettuce and parsley. Charming atriums are placed on the corridors between the country houses and are planted and maintained by both the management and the residents.

Two of the men have specialized in rose gardens and have exhibited specimens in the rose shows staged by the Garden Committee. The Committee meets occasionally to discuss exhibiting roses, stages of bloom, disbudding and grooming.

In addition to the rose show, two other flower shows with outside accredited judges were held, featuring summer flowers and house plants. Many of the exhibitors had never entered a flower show before and we were surprised at the quality of materials. Twenty-five people made more than 40 entries. Another show was planned for house plants and forced bulbs for February as this manuscript went to press.

the memorial garden

Since the opening of Dunwoody Village, the Garden Committee has been an active group of men and women. Two years ago they developed the idea for a Memorial Garden for the use of all of the residents and especially for those who might be in the Medical Center so that wheelchairs and walkers could be maneuvered with ease. The design and planting plan were done by the Committee.

Financing the plan was of course the first consideration. A House & Garden Tour of Dunwoody Village was held in the spring of 1976, which brought in a sizeable sum. A garage sale of residents' leftovers followed in the autumn with a net profit of $1,000. Generous contributions from the residents and memorial gifts from families and friends also produced a substantial amount to accomplish this project.

The Memorial Garden was started in the spring of 1977. A large free-form concrete terrace was laid with a path leading to a hexagonal gazebo. The garden has been planted with trees and shrubs leaving bays around the terrace to accommodate the hundreds of annuals raised from seed by the Committee in an old greenhouse that has been on the property for many years. These flowers were then transplanted by the Committee and interested volunteers and maintained throughout the summer.

The garden was blooming gloriously when it was dedicated on September 11. But even before that the residents and their friends enjoyed it and the first major event there was a picnic held in July for 40 patients and nurses, replete with grill and music.

How fortunate we all are, at this time in our lives, to be in these lovely surroundings, where everything is done for us. We came here to get away from the problems of running a house and large gardens, but a lot of us are back having the fun of our own small, more manageable garden again in a lesser way, of course, but loving it and feeling younger.

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CRAFTS FROM THE GARDEN

by Jan Riemer

Cucurbitas

photos by author

Lagenarias

Luffa Gourds

I dispute the adage that claims "It takes a fool to raise a gourd." Should cultural conditions be ignored or if Nature blankets our gardens with a cool, wet spell, as often happens in June, it could be disastrous to the gourd family.

With that warning signal, let's proceed with the joys of raising and crafting these quaint and ancient members of the Old World tropical regions.

Formerly gourds were categorized as part of the *Cucurbitaceae* family which includes squash, cucumbers, melons and pumpkins but in recent years these non-edibles have been reclassified and listed under two main headings—Lagenaria and Cucurbitas.

The Lagenarias, often referred to as "Lags," are the thin-shelled, big gourds that sometimes grow to immense sizes and odd shapes and are used primarily to make drinking cups, ladles, birdhouses, bird feeders, animal designs, planters and vases.

The varieties under the Lagenaria headings include Dippers, Pilgrims, Bottle, Hercules, Tobacco Box, Dolphin, Half Moon and Star, Long Marmorta, Chinese Water Jug and Penquin, which, with a bit of imagination, can be made into all sorts of curiosities.

The Lags require a long growing season so it's essential to start them indoors towards the end of April, and ideally transfer them to the cold frame before planting in the summer garden. However, the transition from inside to the permanent garden is possible when weather permits. Our experience has been that anytime before June first is too early. If a cold spell should develop, they should be given a temporary covering with a wide mouth glass jar.

All gourds may be raised in any soil where the squash family thrives—or to be more specific, full sun with some afternoon protection; a rich, light, well-drained loam laced with a bit of compost and ample moisture. Avoid excessive nitrogen as it causes excessive vine growth with very little fruit.

If a fence or trellis is provided, the vines will climb and cling tenaciously to the support, and the fruit will remain more uniform than if it were to lay on the ground. However, if the gourds become heavy and cumbersome they should be guided to a straw bed on the ground to avoid injury from dropping. Although our gourds have never been attacked by the squash borer we still take precautions by encircling nasturtium seeds around the plants that have been separated by 8 to 10 ft.

These fast-growing lagenaria gourds are voracious feeders and should be dressed with fish emulsion during their growth.

Nicely scented, showy white flowers precede the fruit that will vary in length from 3 in. to 3 ft. It is during their growth that some gardeners like to create different shapes by simply bending the longer gourds gently with their hands while a soft tape wrapped around the smaller ones will result in the desired effect. For example, a bottle gourd, while still soft, can be made to look like a doll if the soft tape is tied around the upper end (near the stem) to create a head on the round body of the gourd. Or the young fruit can be placed in a bottle or glass container to conform to the mold. Once the gourd has developed, the glass may be removed by breaking it.

The gourds should be harvested by cutting the stem with a sharp knife when their outer green covering changes to a light, creamy brown, when their shells become very hard or after the

first light frost. Avoid bruising the fruit and allow several inches of stem to remain so it can be hung to dry. They can also be cured on a rack where air circulates in a cool, dry place. When the gourd is too heavy to hang by the stem a fish net works wonders. Drying time varies anywhere from one to six months and is determined when the seeds rattle within. If a fungus develops on their coat during the drying period wipe it off with a soft cloth that has been soaked in a disinfectant, or if you prefer a mottled effect let the fungus remain. Chances are you'll have enough gourds to experiment with both methods.

As many as 25 gourds will grow on a single vine, and if that's just too many sponges, they're delicious when boiled and served as a side dish if harvested when they're cucumber size and before the interior becomes a network of fiber.

When the gourds have dried thoroughly, they should be soaked in boiling water until the waxy, epidermis covering becomes soft. (Discard gourds with thin shells as they may eventually split or break.) Scrape the outer film with a stiff brush so the paint will adhere to it, and while still damp cut into the shells with either a sharp knife or keyhole saw for any openings and designs.

Before decorating the wood-like surface with scenes, faces or lettering, rub until smooth with fine sandpaper. Any reliable wood glue can be used to join one or more gourds together when you are feeling creative.

For quick drying and a high gloss, paint the designs on with artist tube colors mixed with varnish as a medium. Poster paints are also effective, easy to apply, quick drying and inexpensive. A final coat of shellac or varnish will enhance the color and add durability to the finished object.

Our Lags may not be relegated to the Egyptian tombs where some Lagenaria utensils, dating back to 2000 B.C., have been found, but because of their lasting qualities they may become heirlooms within your own family.

cucurbita

The Cucurbita gourds include a number of varieties that have thicker skins than the Lagenaria group. Their scentless yellow blossoms form small fruit but what they lack in size is compensated for by their interesting colors, stripes and shapes.

Their soil requirements and culture mimic the large gourd; however, the seeds may be sown directly into the soil by planting five seeds per hill, and removing three of the weakest plants when they're about an inch high.

They reach maturity in about four months or when their coat has become hard and the stem has begun to shrivel. Unlike the Lags they should be gathered before frost sets in. After harvesting, wash the gourds in a solution of two tablespoons of borax mixed with one quart of water; wipe with a soft cloth and hang to dry in a well-ventilated area for about two weeks avoiding, of course, any direct sun or artificial heat.

If mold should form during the curing, wash off with a strong disinfectant, but if allowed to stay on until just before rot sets in, and then wiped off, the mold forms unusual mosaic patterns. They may then be polished gently with a top grade transparent floor wax at two week intervals until the desired finish has been reached.

The keeping qualities of the Cucurbitas are usually limited to seasonal enjoyment as centerpieces arranged artistically in bowls and baskets, or strung decoratively to hang next to a fireplace adding a touch of old-fashioned charm.

The luffa gourd is actually a member of the cucumber family but because it's such a favorite among women it should be allowed some lineage.

European women have used the fibrous luffa for centuries in their baths to stimulate circulation and remove particles of dry skin. Its merits have more recently been acclaimed in the Western hemisphere, and their uses not limited to the bath as indicated by their other names—the dishrag gourd and vegetable sponge. In fact the luffas have a myriad of uses after being commercially processed.

Their culture is exactly the same as the lagenaria group, but if not ripe they may remain in the garden until the vines are killed by frost. As many as 25 gourds will grow on a single vine, and if that's just too many sponges, they're delicious when boiled and served as a side dish if harvested when they're cucumber size and before the interior becomes a network of fiber.

The mature gourd will vary in size from 1 to 2 ft. in length. Its skin is smooth and the fruit bears lovely yellow flowers.

After the gourds have been harvested, soak in a tub of water until the outer covering and the pith soften. When the shell begins to disintegrate it is easily removed by rubbing two luffa gourds together. Remove the seeds which may be dried, stored and saved until the next planting, and wash the sponge in several changes of water before placing them in the sun to dry and become bleached.

Growing gourds is a fascinating adventure, and a pleasant way to introduce children to the world of gardening and craft making.

Charm String Gourds Made from the Cucurbitas for the Fireplace

After drying and waxing the gourds, they are strung by drilling a small hole in the stem end and putting a screw eye and a wire run through each gourd separately to form the charm string. Hang wreathlike over fireplace.

Birdhouses Made from the Lagenaria

The entrance opening must be exact for each bird to be attracted. The holes can be marked with a compass and cut to size with an expansion bit or fine keyhole saw. The entrance should be well above the bottom of the gourd to allow space for nesting material, and to prevent the fledglings from leaving the nest prematurely. All birdhouse gourds must have a few small holes bored into the bottom for drainage. Remove all seeds and fiber, and sand lightly to remove all loose flesh before painting and decorating.

	Outside Opening	Inside Quarters
Wren	1 inch in diameter	4 inches
	Mount 6 ft. above the ground in partial shade.	
Purple Martin	2½ inches in diameter	6 inches
	Mount 12 ft. above the ground away from trees or buildings.	

Note: The seeds mentioned in the article can be obtained from Nicholas Garden Nursery, 1190 North Pacific Highway, Albany, Oregon 97321.

Jan Riemer writes a weekly syndicated garden column and is a free-lance writer with contributions to state and national magazines.

A STREET OF VINES: CHINATOWN COMMUNITY GARDEN

Bok choy *(Brassica chinensis)*

Over the past two decades, various pieces of land have been acquired along Vine Street in downtown Philadelphia to expand the Expressway. Although money was available to aquire land and to demolish residential and commercial properties, apparently there was no money to build, in spite of community opposition as well as opposition from the Keystone Automobile Association. While waiting for an adequate and objective Environmental Impact Statement, in the midst of this battle between the proponents of the Expressway and the Chinatown community, a garden unexpectedly sprang up on a vacant lot at the corner of 10th and Vine Streets.

It all began a year and a half ago when the Chinatown Community enrolled in the PHS Community Gardening Program and received seeds, fencing, fertilizer, tools, hosing, and peat moss to launch their first garden.

Most of the gardeners are residents of the community. Few of them speak English. Even fewer venture beyond their crowded little dwellings except to work and shop within the community. This garden gives them reason to stay and work outdoors. It is also a social occasion for most of the elderly people, to rub shoulders with old friends and to exchange news and garden tips. So, as their carefully nurtured vegetables grow, so do their friendships.

Often, three generations within the same family till the same plot. For the first time grandchildren have begun to appreciate the beauty of growing vegetables from seed to harvest. China, from whence many residents came, had an economy based on agriculture. Many Chinese-Americans still feel an affinity for farming and growing. They want to be self-sufficient, and growing their own vegetables is a symbol of their economic independence. In this, they find pride and satisfaction.

Many gardeners put in a full day's work elsewhere in garment and jewelry factories or in restaurants. At home, they find recreation and relaxation when working with the soil and producing garden bounties for their dinner tables. They exchange crops and anecdotes.

At the Society's Harvest Party for Community Gardens, many people expressed interest in how to grow and cook the unusual Chinese vegetables. You can buy seeds from Chinese grocery stores in the major U.S. cities. Many of the gardeners use shrimp shells and egg shells to fertilize their crops because these items provide essential minerals and vitamins.

common and imported vegetables

Two major categories of vegetables

by Anna Ku Lau

Anna Ku Lau received a master's in architecture from the University of Pennsylvania. For the past two years she has served as the executive director of the Philadelphia Chinatown Development Corporation. One of her first jobs was to organize the Chinatown Community Garden in August 1976 with over 70 participants.

photos by Edmund B. Gilchrist

Long bean *(Phaselous sp.)*

Celery cabbage *(Brassica pekinensis)*

are planted in our garden. One category represents those plants familiar to gardeners. They are yellow squash, green peppers, sweet peppers, hot peppers, tomatoes, eggplants, peanuts, lettuce, and Swiss chard.

The second category includes those plants indigenous to China and have been imported by seed. I have listed these with their common names followed by their Chinese name (the Cantonese dialect is used because these vegetables can be found in the Chinese groceries which are owned mostly by Cantonese-speaking people).

1. Bean sprouts ("ngar choy" — sprout vegetable), *Vigna radiata:* tiny, white shoots with yellowish green hood they are not grown in the outdoor garden but can be grown easily in a dark place at home.

2. Bitter melon ("foo quar"), *Momordica charantia:* balsam pear, in the squash family. Looks like a warty cucumber (4-8 in. long), except for its oval shape with one pointed end. Parboil and stir-fry with black beans and beef slices.

3. Bok choy (white vegetable), *Brassica chinensis:* crisp, white, swollen stalk like chard with shiny green leaves at the end of the white stalks.

4. Chinese broccoli ("gai lan"), *Brassica oleracea italica:* eaten for the long stalks before flowers form.

5. Chinese celery cabbage ("wong ngar bok" — yellow-white bud), *Brassica pekinensis:* sometimes known as Michihli, looks like cos lettuce, has a long tight head with leaves that have crinkled edges.

6. Chinese cucumber ("sing quar"— melon with strands), *Cucumis sativus:* Burgess China hybrid. The cucumber originated in India more than 3,000 years ago, passed from China to the West; Columbus introduced it to the New World. This particular cucumber has ridges throughout its length, grows to a foot long and may curl up like a snake.

7. Chinese spinach ("yin choy"), *Amaranthus spp.:* there are many Chinese varieties and names for this vegetable eaten for its leaves and not the stalk which is often hollow.

8. Ginger root ("g'ee-ung"), *Zingiber spp.:* a gnarled, brown root, about 3 in. long, is used for seasoning, can be grown indoors at 70° to 80°, needs plenty of water for nine months and allowed to become half dormant in winter for the remaining months.

9. Long bean or long pod ("dau gok" — bean horn), *Vigna sesquipedalis:* a foot-long string bean, grown like pole beans.

10. Mustard greens ("gai choy"), *Brassica juncea:* dark-green, leafy vege-

continued

table with a slightly bitter taste, cooked in soup with pork strips. A very wholesome appetite stimulator. Originally from India, it spread to Burma and China.

11. Snow pea pods ("suet dau"), *Pisum sativum macrocarpon:* flat, pale-green pods eaten pods and all. It has white flowers and can be found as Burpee's sugar peas.

12. Winter melon ("tung quar"), *Benincasa cerifera:* large squash, green-gray with a powdery white surface, tender and white on the inside. It is used in soup along with mushrooms and Smithfield ham, and for special occasions the melon itself is used to cook the soup after it has been hollowed out.

easy to grow

Growing Chinese vegetables is as easy as growing other vegetables in a home garden.

Cabbage is the parent of the whole mustard family or *Brassica,* which not only includes Chinese mustard greens but also Chinese broccoli and two forms of Chinese cabbage -- bok choy and Chinese celery cabbage. They are cool-season crops (spring or fall) and need well-drained garden soil. Beginning in late July prevents the plant from bolting to seed too quickly. All are susceptible to many insect pests and soil-borne diseases. They must be well fertilized and watered during the entire growing season. Mustard greens can be grown in rows 1 ft. apart and thinned to 3-4 in. between plants, leaves should be cut frequently, and harvested in six weeks. Chinese cabbage, a heavy feeder, needs fertile soil enriched with compost and high nitrogen-potassium fertilizer or generous quantities of blood meal. Seeds should be sown directly into the ground in rows 2½ ft. apart and thinned to 18 in. between plants. Harvest in two to three months.

Snow peas and long beans can be grown in average, well-drained soil. They are also cool-season crops (spring or fall). Plant in double rows 2½ ft. apart and seedlings thinned to 4-6 ft. apart. Supports are needed for the climbing vines. They need constant watering and can be harvested in 60 to 70 days. Pods should be picked just before cooking and before pods become swollen. Snow pea pods can be kept fresh by freezing immediately. Eliminate pea aphids with rotenone or pyrethrum.

Cucumber and squash is the next general category, which includes the Chinese cucumber, bitter melon and winter melon. All do well in warm, sandy loam soil and can be planted when the danger of frost has passed. They need soil deeply enriched with well-rotted manure and compost to retain soil moisture. When planting, the hill method is simplest. The hills

Bean sprouts *(Vigna radiata)*

Snow pea pods (left, *Pisum sativum macrocarpon);* ginger root (right, *Zingiber sp.)*

Winter melon *(Benincasa cerifera)*

should be 4 - 6 ft. apart for cucumber and bitter melon but 8 ft. apart for winter melon. Male and female flowers may be on the same plant but the stamens and pistils are never in the same flower. Once started, the vines grow rapidly with large leaves shaped like a maple leaf with yellow flowers. The vines can be grown in an overhead trellis and the fruit allowed to hang below. Seventy to 120 days are needed before harvest depending on the size of the fruit — less time for cucumber and bitter melon, and more time for the larger winter melon. Pyrethrum and rotenene can be used to control the squash bug and squash vine borer. Avoid working around vines when they are wet as they are more susceptible to many diseases that spread when the plant is wet.

Amaranthus or Chinese spinach grows nearly everywhere and under almost all conditions. The leaves vary between all reddish-purple to all green or a mixture of both red and green on the same leaf. It does well in full sunshine and may need dusting the first year to avoid bugs. It can grow as tall as a sunflower. Its tiny black seed is so plentiful that it is hard to eliminate the second year from any garden. Harvest leaves frequently to discourage flowering.

There are many other vegetables to be grown in the Chinatown Community Garden in the future *if* the massive highway on Vine Street is *not* built. Then Vine Street, named by William Penn for the numerous vineyards north of "olde city," will truly be a street of vines.

Growing vegetables has been a rare opportunity in center city Philadelphia where land values are still increasing. The garden is sponsored by the Philadelphia Chinatown Development Corporation, a nonprofit volunteer organization, formed 11 years ago to untangle the problems of urban renewal and community survival and development. It has been a joy to have created an island of green in the midst of rubble for the young and old so that they participate and enjoy achieving something together.

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In its brief existence, the Chinatown Community Garden has already distinguished itself. Their exhibit at the Community Gardens Harvest Party won 17 ribbons and they were invited to exhibit in the PHS Harvest Show. There they received an Award of Merit.

Bitter melon *(Momordica charantia)*

A Career of English Box

by Edwin A. Peeples

photographs courtesy of Longwood Gardens

Buxus sempervirens 'Belleville'

Edwin A. Peeples is author of *Summary for a Sesqui,* an abbreviated 150th history of PHS. He is also a frequent contributor to *Green Scene.*

When I was six years old, my Uncle Howell took me on the languid boat journey that the sidewheeler, *Charles McAllister,* made down the Potomac to Mount Vernon. What impressed me most about Mount Vernon were the number of large, dense shrubs, billowing masses of dark green foliage, that looked as if they belonged in a Maxfield Parrish mural instead of out in the open. I asked Uncle Howell what they were.

"Box," he said. "Box bushes."

"Are they used to make boxes?"

"Yes." Uncle Howell was a tease. "Cigar boxes."

I became a great admirer of the wood in cigar boxes, supposing that all of it originated in or around Mount Vernon. It was years before I realized that there were not enough box bushes on earth to supply the wood for the number of cigar boxes on earth.

As post-depression prosperity crept into Atlanta, my hometown, the wealthy, who ran up great estates, planted abundances of these same box bushes, which were, of course, *Buxus sempervirens suffruticosa,* commonly called English box, although its origins were southern Europe, Asia and Japan, and the Romans were cultivating it long before anyone ever heard of England.

The sobriquet, English, came from the extensive use of the box in England in the seventeenth and eighteenth centuries in cloister garths, castle bowers and town yards, in knot gardens and in borders. The shrub thrives in England's moist climate and moderate winter temperatures.

For me, the re-encountering of English box was a cloudland revisited that was better than the original visit. The foliage was as incredible as I had remembered it, and there was also a fragrance that I hadn't remembered. There are those who despise the scent of English box because, they say, it smells like cats. Not to me. To me it smells like freshly printed dollar bills. And well it should. For the shrub grows slowly enough: 2 to 3 in. per year in the favorable climates of England, Virginia, Maryland and the Carolinas, and little more than an inch per year in our climate. Hence, an English box of any size, having had to be aged like wine, is, like aged wine, quite expensive. The most recent prices I've heard are $35 to $50 for shrubs measuring about a foot and a half high and about a foot through. Come into possession of one of those glorious mammoths which have seasoned for three generations against the lee wall of a stone, country dwelling, and you can name your own price, if you are fool enough to sell.

That makes *B. sempervirens* sound as if it were beyond the reach of most of us, a toy for the very rich. Not so. Not if you start soon enough and follow a few reasonable procedures. Other plants and shrubs are the pleasures of a few seasons or a decade; English box is a career.

box and claret

About 25 years ago, owing to the need to shore up steep banks, my wife, Mimi, and I put in 200 feet of ha ha wall. After we had stared awhile at this barren precipice, Mimi found a sale of English box plants at 50¢ each. We bought 100, rather as one buys several cases of good, young claret to put down. The plants were 6 in. tall and an inch and a half wide. We planted them 8 in. apart in a hedge 4 ft. back from the wall.

The winds of winter visited them harshly, yellowing their few leaves, and

Buxus sempervirens

dogs and children snapped off two or three at ground level. The snaggled result seemed unlikely to produce anything remotely resembling the lush verdure of Mount Vernon or the gardens at Williamsburg.

Three years after we planted the box we brought from our woods and planted between the hedge and the wall three wild dogwoods. As soon as the dogwoods achieved good spreads of branches, about a year later, the box hedge improved remarkably. The branches gave the effect of a lath house, breaking the force of the winter sun and wind. The hedge suffered less winter burn, lost less of the previous year's growth and, thus, grew faster. By the end of the eighth year, the hedge had grown together and was a foot tall. We moved the plants that had been broken off, putting them in a nursing bed with maximum protection from the weather and fertilized them heavily. They speedily overtook the plants in the hedge.

We noticed that once the plants in he hedge grew together, their growth slowed considerably. As we now had other places for box, we began transplanting every other plant in the hedge, leaving the remaining plants 16 in. apart and spacing the transplants 16 in. This gave us hedges in which individual bushes had a curiously mashed look: 10 or 12 in. tall and through, 6 to 8 in. wide. Freed from constraint, however, each bush spread and, in a year or two, was round again.

At this juncture, we did another planting that proved favorable to the box. Against the stone of the wall, we planted a second hedge of Hicks yew, *Taxus baccata hicksi,* leaving between the hedges the 3 ft. of space in which the dogwoods were planted. From the

continued

moment this second hedge went in, the box suffered no further winter burn, not even in the disastrous 1976-77 winter, when we logged sustained periods of subzero nights.

We have also confirmed the validity of the name *sempervirens,* which means ever living. Plants broken off at ground level came back. Plants that have lost major branches have regrown them. Five of our initial plants were in a plot where we later planted Pfitzer's juniper, *Juniperus chinensis pfitzerana,* which spread rapidly, bringing dense shade, then drooped to the ground. Soon the five box were in a cave of juniper. When we rescued them, they were five 3 in. stubs, two of which had no leaves. We transferred them to the nursery bed three years ago. Each is back to 5 in. tall and 5 in. through.

Pursuing our thinning schedule, we've done it entirely twice and are in the process of doing it a third time. The plants in our original hedge are now 4 ft. apart and nearly 3 ft. tall and 3 ft. in diameter. The plants we are moving we are putting 4 ft. apart. The plants we moved in the two earlier cycles have either grown together or nearly done so. Soon we must decide whether to move alternate members of these plantings. Probably we won't, because we're running out of space for more hedges. Besides, the mathematics of the progression grows staggering as transplanting approaches the ultimate stage. According to the Bush-Browns, *B. sempervirens,* left unclipped and raised in a favorable environment will grow 12 to 15 ft. tall and 25 ft. through. Here's the progression: 100 plants placed 8 in. apart stretch 70 ft. At 16 in. apart: 140 ft.; at 4 ft. apart, more than 400 ft. If we ever got to 25 ft. apart, our hedge would be more than 800 yards long; eight times the length of a football field.

In our climate, only Longwood Gardens would be able to keep this much box of this size in a favorable, sheltered environment. So, the alternative is to hold our hedges to the heights we can accommodate: 3 ft. high by 4 ft. through.

for the zealous

English box in such abundance probably is not for everyone, particularly for those who think it smells like cats

There are those who despise the scent of English box because, they say, it smells like cats. Not to me. To me it smells like freshly printed dollar bills.

or those who grudge giving so much time to a single shrub. But, for those who share our zeal, a summary of our experience may be useful.

Plant the initial stock 8 to 10 in. apart. As quickly as possible, plant small trees to give the lath house effect. Cut the flow of winter winds with other hedges of hardier shrubs. Each time the box grows together, transplant alternate bushes, spacing the transplants at double the preceding spacing. Box transplants easily either in spring or fall. Apart from a single tap root, which may be cut, the remaining roots are all on the surface. To be sure of getting all of these, soak the base of each plant with a hose until the soil is a slurry. Dig the holes in advance. No matter how rich the soil taken from the holes may be, mix it with peat moss in the proportion of 50-50.

Water constantly for the first year. Watering should soak the leaves as well as the roots, for *B. sempervirens* suffers severely from long periods of dry leaves, more, perhaps, than any other broad-leaved evergreen.

In England and in our mid-Atlantic states, *B. sempervirens* puts out new growth twice: in the spring and in the autumn, but in Pennsylvania frost usually nips the second growth. This is why the shrub grows only half as fast here. Hence, although *B. sempervirens* will tolerate the most severe kind of clipping, it shouldn't be clipped until after the spring growth each year has matured, if the object is to allow the shrubs to continue growing. And the clipping should be directed toward shaping. On the other hand, if the object is to hold a hedge at the same size, the plants can be trimmed back to the same size and shape year after year. There are records of box hedges which have been kept 10 in. high for 75 years. The best time for clipping, either to shape or to sustain the same size bush, seems to be about mid-June. That allows the plants a brief refreshment from the new growth.

Few of us can any longer afford to put down the great wine cellars that our ancestors did, but all of us can leave our heirs an abundant heritage of English box, which is always a joy to behold, a fragrance of riches and, in time of dire need, money in the bank.

The next time you are at PHS headquarters stop by the Bishop White Garden on the corner of 3rd & Walnut Streets. You'll see fine mature examples of box on the perimeter of the garden, grown to a height of about 4 ft. The parterres are framed with clipped box grown about a foot high.

Dandelion Salad & Carrot Jam

by Jane Reed Lennon

Jane Reed Lennon grew up in the midst of a vegetable garden. She has grown them in an English greenhouse, on a Moroccan rooftop, in the Colorado prairie and now in a Philadelphia community garden. She has lectured about vegetable growing and has exhibited her produce, fresh and canned, at the PHS Harvest Show.

Vegetable gardening is big business now. Giant food combines have bought into the seed business and petrochemical companies are heavily into the home garden fertilizer and pesticide industries, car manufacturers make garden equipment and garden writers are after their share of your home garden expenditures.

A proliferation of vegetable "How to —" and "— Made Easy" books have appeared on the scene. Now it may be that the basics of how to grow carrots are the basics of how to grow carrots, but a lot of these books are discouragingly similar, and the carrots would probably do just about as well without the books. That, of course, is not true of all books about growing vegetables. The PHS Library has a large collection of the better ones, as well as many older books, though out of print, not out of date.

Among all the library books about vegetables, there are a few written by good cooks and serious eaters. If planning a vegetable garden makes you hungry, I recommend this group. The season's first gourmet salad is outside waiting for you.

Collecting dandelion greens for a salad must be done on a fine day in the earliest spring. It takes an hour, maybe longer, to collect a good salad. The sights and smells of spring are likely to distract you from your work. Cut only the new, bright green leaves from plants that grow along fences and edges. Be selective and keep at it until you get chilly or another spring project lures you away. "My time is money," you say, "What a stunningly expensive salad that will be!" Would you have taken an hour's fresh air and exercise if not for the salad?

Angelo Pellegrini's dandelion salad recipe begins with coating each of the coarse and slightly bitter leaves with a three-to-one olive oil and vinegar dressing, salt and freshly ground pepper. Rub both sides of two slices of well-toasted bread with good juicy garlic and cut into croutons; mix into the salad.

In *The Food Lover's Garden,* Pellegrini puts forth a good case for dandelion salad as well as for home food growing. As he seems to be a serious eater and cook, his garden produces the vegetables and herbs that must be absolutely otherwise unobtainable. He advises the reader to be a sensible gardener: Do well all that is necessary to procure a good crop but no more. A daily closeness with the garden is the key to successful growing and good eating, with plenty of fresh air and exercise to

Do well all that is necessary to procure a good crop but no more.

sharpen the appetite. *The Food Lover's Garden* has sound advice for novices about to build their first garden and plenty of tips for more experienced growers. Plants and practices are illustrated with line drawings and Pellegrini's recipes flavor his book.

Ruth Matson in *Gardening for Gourmets* suggests planning the vegetable garden before dinner, in a comfortable chair, daydreaming about food. That may sound casual, but by keeping a garden log for a number of years, Matson has tailored her garden to fit her culinary needs; she has refined both gardening and cooking to an art. Careful use of space and timing at planting and harvesting are the keys to her small productive garden. She describes her book as a personal history of her backyard garden. For example: plant onion sets almost touching in the row. Thin every other plant at the scallion stage, as needed in the kitchen. Continue thinning (harvesting) every other onion as they reach the sweet boiled onion stage, and serve with fresh peas. New sets can be added in empty spaces until they begin to sprout in the bag. Keep harvesting, giving remaining onions

continued

photo by Patrick Radebaugh

A small space in a dry, dark place can accommodate a modest supply of home canning. Jars of beautifully colored homemade preserves make welcome presents.

growing room, and continue until you have eaten them all. Garden plans to illustrate the use of space and a planting and harvesting timetable are also useful. Hers is a good book for experienced gardeners who want to refine their operation.

A recipe section ends the book and includes ratatouille, that tasty vegetable stew of all the summer fruiting vegetables, and a marvelous idea for souffle-like corn pancakes.

For those of you who would like to enjoy your harvest over a longer period of time, Jacqueline Heriteau's *How to Grow and Can It Book* is good reading. If you contemplate growing a year's food supply, Heriteau's book includes tables to convert row-feet into freezer servings, canning garden plans, lists of varieties best suited for canning and other information to take the guesswork out of your operation.

She explains the canning and freezing methods for safe, high quality, home-processed foods. Instructions are clear and easy to follow and illustrated where necessary. The recipes are delicious and give the gardener with a little surplus produce good ideas for special pickles and jams.

CARROT JAM

Preparation: For each 8 cups of grated raw carrots, you will need 6 cups of sugar, the juice and grated rind of 4 lemons, 1 teaspoon of ground cloves, 1 teaspoon of ground allspice, and 1 teaspoon of ground cinnamon. Wash, grate, and measure the carrots into a big kettle. Grate the rind from the lemons, then juice them, strain the juice, and then measure it into the kettle. Measure and add all other ingredients. Turn the heat to medium-low and stir until the sugar has dissolved. Keep the mixture at a very low simmer and stir occasionally until it thickens enough to mound a little on a spoon.

Packing: Turn into hot half-pint jars and seal.

Processing: Process 10 minutes for altitudes up to 1000 feet above sea level.

I followed the recipe and the jam was a lovely golden color, and a much appreciated Christmas present.

Putting Food By by Hertzberg, Vaughan, and Greene does not touch on growing food but does not miss a trick in the food storage department. They even include reasons why *not* to do certain things—like canning in the oven. The instructions for drying and various other methods are clear, correct and interesting reading.

Home Storage of Fruits and Vegetables by E. V. Loveday is another good choice in the food preserving department. It may seem early in the growing season to think about food storage, but it's certainly important in deciding what and how much to grow.

If all you really want to know about vegetable gardening is how to grow carrots, look in the *Stokes Catalogue* under "carrots." This catalogue is issued yearly and has growing instructions for all the seeds they offer. Vegetable seed catalogues are a good source of information as well as seed. The Library has an astounding collection of seed and nursery catalogues, indexed by subject as well as alphabetically by name of firm.

Next spring your garden planning book selection will be made easier by *Selected Books '78,* an annotated list of selected library books on all subjects, to be published by the Library this summer.

Good growing and good eating.

In the PHS Library

Growing, Cooking and Eating Vegetables

All About Vegetables. Walter L. Doty, Editor. Ortho Div., Chevron Chemical Co. (Also for sale at PHS.)

Gardening for Good Eating. Helen M. Fox. Macmillan Co., New York, 1943.

The How To Grow and Can It Book. Jacqueline Heriteau. Hawthorn Books, Inc., New York, 1976.

Gardening for Gourmets. Ruth A. Matson. Doubleday & Co., New York, 1959.

The Food Lover's Garden. Angelo M. Pellegrini. Knopf, New York, 1970.

The Beginners Kitchen Garden. Jan Riemer. Wm. Morrow, New York, 1975.

Gourmet Gardening. Hamilton Tyler. Van Nostrand Reinhold Co., New York, 1972.

And Storing Them

Home Storage of Vegetables and Fruits. Evelyn V. Loveday. Garden Way Publishing, Charlotte, Vt., 1972.

Putting Food By. Hertzberg, Vaughan, and Greene. Steven Green Press, Brattleboro, Vt., 1973.

Seed Catalogs in the Library

W. Atlee Burpee Co., Warminster, Pa. 18974

Harris Seed Co., Inc., Moreton Farm, 3670 Buffalo Road, Rochester, N.Y. 14624

Stokes Seeds, Inc., 525 Niagra St., Buffalo, N.Y. 14201

Thompson and Morgan, Inc., P.O. Box 24, (401 Kennedy Blvd.), Somerdale, N.J. 08083

growing interests

dahlia hybrids 'unwin'

While planning this year's garden, I remember Halloween last fall. The day was bright and cool, with a crisp breeze. My dwarf dahlias stand out in my mind, their colors still brilliant yellows, oranges, reds and pinks. Luckily, the first killing frost was late, and the dahlias maintained their own.

Dwarf dahlias can easily be started from seed. The seeds are fairly large and can be planted in Jiffy-7 pellets, or shallow flats of peat and perlite. Within a few days, green leaves appear. They are vigorous growers, and must be watered and fertilized frequently. Start the seeds in late March, and keep the plants in bright light.

Because dahlias are tender, wait until the end of April to plant outside. If your soil is cold and wet, wait another week.

To help the dahlias grow and flower quickly, water with a dilute fertilizer (such as Peter's or Miracle Grow) about once a week. Like their bigger brothers and sisters, dwarf dahlias require generous amounts of nitrogen, phosphorous and potash.

Growing dahlias can bring some frustrations. Aster yellows, a virus disease, can cause stunting and leaf yellowing. Stem borers may weaken one or two plants. Last summer, air pollution in July caused some leaf injury. To control these problems, just pull out and destroy the affected plant.

My dahlias were English dwarfs. These grow to variable heights, 18 to 24 in. These seedlings produced a wide range of colors. If you want all one color, plant named tubers instead.

Dwarf dahlias can be used as colorful border plants. They can give you a bright calico patch very inexpensively. They can give you splashes of color in window boxes and other containers.

Try dwarf dahlias in your garden. They bloom from July to frost, they produce quality cut flowers, and they bring you bright, laughing colors.

Diane M. Katzaman

photo by author

Diane Katzaman loves to experiment by growing different plants every year. Penn State graduate in horticulture in 1971. County Agent — Horticulture in Bucks County. The office is at 410 Bath Road, Bristol, Pa. 19007.

●

saccharum officinarum

When I planted the sugarcane, I was only thinking about having something different in the garden. I chose a sunny and fertile spot, then planted the tiny seed in a row. I kept the seed watered well and about three weeks later, a tiny plant began to sprout up. Not knowing what the cane would look like, I was amazed to see that it looked like corn with pretty, long leaves.

Caring for the cane was easy. I just kept it weeded and watered when necessary. Then I would pull the soil up around the roots and leave it alone, waiting around and watching it grow. It grew more than 12 ft. tall and had a beautiful plum colored flower at the top. The nodes were approximately 6 in. apart.

In November I cut it down. When you chew a piece of it the soft pulp gives a juice that has a sweet taste, like sugar candy. The pulp has a texture like coconut. You can make sugar or syrup or wine from the cane, but I couldn't do that so I gave it away to a neighbor who owns a health food store. I would go past there every day to see it until he sold it all. He sold off the six-inch sections for 25 cents apiece. Next year I won't plant sugar cane; I want to find something different. I'm thinking about Chinese vegetables right now and there are lots of interesting foreign seeds in the Burpee seed catalog and at Sears.

●

photo by Wanda Rochelle Larrier

Hazel Felton is a community gardener out at the 56th & Haverford Demonstration Garden co-sponsored by the Penn State Urban Gardening Program and Haddington Leadership Organization. The Garden's harvest was rich enough to receive at least three blues at the PHS Harvest Party for the community gardens. In the Sweepstakes, they placed third out of the approximately 40 competing gardens.

digging for information

by Ed Lindemann

Horticultural questions continue to pour into the PHS headquarters daily. Most of the questions require simple routine answers from the staff. The plant is suffering from too much light or not enough, from poor drainage or a lack of humidity. Usually the problem can be quickly cleared up by adjusting the growing conditions, adding a needed nutrient or by applying the necessary pesticide. Occasionally, we receive a letter containing a specimen that indicates a particular problem that cannot be treated with any degree of success at that point in time. That happens because people do not notice many pest or disease problems until they have become acute. Late winter and early spring are when prevention should be considered. Here are some letters from members that will illustrate my point. Perhaps you will notice one of your plant problems among them; if not, think back over last year's gardening activities. Is there something that you should consider doing to prevent problems from recurring this year?

pachysandra scale

(July, 1977)

Q. I have lovely large beds of pachysandra that have been growing beautifully for years. Now for the first time I notice that areas of the beds do not look healthy. Upon closer inspection, I notice that the undersides of the leaves and parts of the stems have a whitish substance on them. Is this a mold or fungus?

P.W., Philadelphia, PA

A. The problem is not a fungus, but scale. Several different varieties of scale attack pachysandra as well as other garden plants (check euonymus and bittersweet). Although it is somewhat late in the season [note July date] it won't hurt to spray the affected and surrounding pachysandra plants with a solution of malathion. Follow the directions for scale on the label. Next March or early April while the plants are still dormant spray with a dormant oil spray following the directions on the label. In mid-May apply malathion, follow with a second application two weeks later. The malathion should control any of the insects that may have survived the oil spray.

unsuccessful air layer

(December 1976)

Q. My rubber plant has become very leggy over the years and I read in a book that it was possible to start a new plant by air layering. The information said that roots would appear in four to six weeks. I started my air layer on the first of November and so far nothing has happened. The original plant looks the same.

J.Y., Merion, PA

A. If you followed the directions carefully, my guess is that you chose the wrong time of year. Although your rubber plant is a tropical and is kept indoors it still goes into dormancy during the winter months usually between November and February. The natural light intensity is very low and the plant's entire metabolism slows down. Starting with the middle of February the plant starts into more active growth and is in full swing by the end of March. I have found that I have had much greater success with air layering as well as other types of vegetative propagation if I wait to start after the middle of February.

dodder

(August, 1977)

Q. Along the front of our property we have English ivy growing in the planting strip between the sidewalk and the street curb. The ivy has been there for several years and is attractive year-round. Just recently I have noticed a thin yellow string-like webbing that seems to be covering the ivy. I pull it out but it always seems to return. Recently, while driving along I noticed a large azalea that was covered by the same material. Any suggestions?

R.G., Media, PA

A. The "yellow string" you are referring to is a plant called dodder. Dodder contains no chlorophyll and is a parasite. It is easy to recognize because of its bright yellow color. Dodder has tendrils that it uses to attach itself to its host. After the dodder is attached it breaks off at the ground and derives all of its nourishment from the host plant. Dodder is an annual that comes up from seed produced the previous fall. Once the plant has germinated there is no way to control it. Dacthal applied to the soil in mid-April will prevent the seeds from germinating. A second treatment is suggested for late July. Pre-emergence weed controls are excellent if used strictly according to the manufacturer's directions. These materials are not intended for uses other than those listed on the label.

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Correction:

In Nancy Howard's article in the January issue (page 13) entitled "Bring Them Back Alive" we gave an incorrect address for obtaining import permits. The correct address is USDA Permit Unit
PPQ APHIS USDA
Room 638, Federal Building
Hyattsville, Md. 20782

Also, all good gardeners must have noticed that the captions on page 8 of Joanna Reed's article in the same issue were inadvertently not switched when we changed the position of the photos.

Section of Mr. and Mrs. F. Reghault Fairchild's garden. Frances Fairchild is the sculptor. The trees are *Juniperus virginiana* 'Sky Rocket.' See story on page 18.

THE green scene

HORTICULTURE IN THE DELAWARE VALLEY

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See the Tipsy Virgin and Other Roses on page 4.


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THE
green scene

HORTICULTURE IN THE DELAWARE VALLEY

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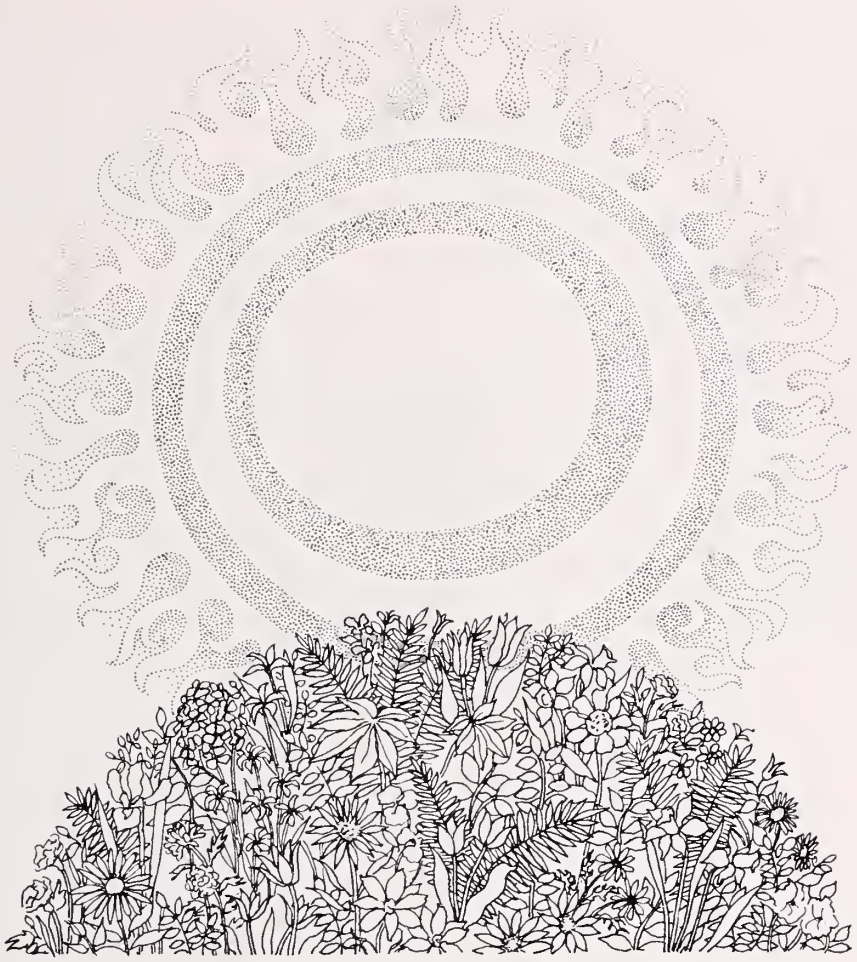


SUN DAY - SUN WEEK

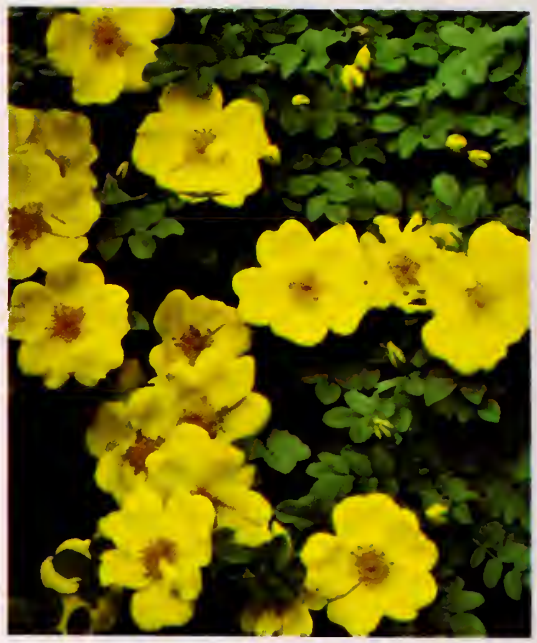
Gardeners and sun worshipers. They know, in their fingers as well as their minds, that the sun is the source of our food, heat, clothing and shelter; indeed it was the sun's energy that combined simple chemicals into amino acids, the building blocks of life. Every horticulturist senses the difference between sunny and shady exposures. Every house plant fancier feels the revival of growth in the lengthening days of February. Every grower forcing flowering material for our spring show has learned that success depends on the number of sunny days.

These comments are made to set the stage for a great twentieth century celebration of the sun — SUN DAY, to be held on May 3, 1978, as the high point of SUN WEEK, which will run from Sunday, April 29, through Sunday, May 7. The organizers see the current interest in solar heat and solar power as a base on which to build a fuller understanding of what the sun means to us and a philosophy of our relationship to nature.

SUN DAY and SUN WEEK are being planned on the principle that actions speak louder than words. Each day is to be marked by events, some demonstrative, others participatory, all related to the central theme, all designed to promote empathy and fellow-feeling among those who take part. It's new; it's free flowing; it's unpredictable. The Society's Council has endorsed it whole-heartedly and urges all its members to participate in some way, if only by contemplating the incredible strength and potential of the sun.

Ernesta D. Ballard

R. gallica officinalis (Apothecary Rose)



Courtesy of The McFarland Company, Harrisburg, Pa.

Rosa hugonis (Father Hugo's rose)

Rosa hugonis:

THE TIPSY VIRGIN AND OTHER ROSES

by Edwin A. Peeples

Edwin A. Peeples is a frequent contributor to the *Green Scene*.

When we first bought our farm, years ago, we found few garden flowers around the house. The traditional farmer was interested in farming, not gardening. The permanent flowers that managed to get planted: a patch or two of peonies and an occasional, forlorn rose, usually were the sweet conceits of a farm wife who wanted one or two pretty things to look at.

The forlorn rose bequeathed to us was *Rosa hugonis,* first discovered growing wild in northern China in 1899 by Father Hugo, a missionary, and named after him. Our hugonis clung perilously to the edge of a low stone wall. It thrived, but, owing to its situation, seemed ever reeling and teetering in a drunken dance. The first time we saw it bloom, the yellow blossoms were so perfect and so exquisitely chaste, so contradictory of the bush's posture, that I nicknamed it The Tipsy Virgin. I was amused later when I was told that my nomenclature had not only slid into the wrong gender, but perhaps the wrong preoccupation; *Rosa hugonis* is commonly called Father Hugo's Rose. It was too late, however, for me to switch names and The Tipsy Virgin stuck.

The Tipsy Virgin proved a harbinger of spring. It was the first rose to bloom each year, and its profuse blossoms, dense cascades of the softest shade of primrose yellow, blazed in the sunlight and sated the air with fragrance. The Bush-Browns, in *America's Garden Book,* say of this rose: It is "one of the loveliest plants known to cultivation, and no rose garden is complete without it."

It also turned out to be quite durable. No pests or diseases attacked it, and it loved poor soil. The less we fertilized it, the better it bloomed. When we filled in a terrace that buried the original location of our hugonis, we transplanted it to the top of the terrace into soil that was largely hardpan. We lost most of the bush during the transplant. No matter. In three years, it was bigger than before. Five years ago, we had to transplant it again, again losing a good deal. Again it recovered.

We should have stuck to such China or Bengal roses as the *R. hugonis* or *R. rugosa;* such wild roses as the dog rose, *R. canina;* the burnet, *R. spinosis-*

continued

Rosa hugonis: continued

photo by Leonie Bell

R. centifolia cristata (Crested Moss also Napoleon's Hat)

sima or the moss roses, all of which might loosely be called original roses in the sense of having long histories, being pretty much pure rather than hybrid strains and being substantially pest and disease free.

But the first thing the beginner gardener thinks of is the rose. It is the flower with the longest history of reverence, legend and tradition. It was one of the first flowers to be domesticated and this so long ago that the name, rose, is the same word in nearly every language. The Greek poet Sappho sang of the beauty of roses in the sixth century B.C. The Egyptians cultivated it, and its shape has figured in every kind of design from architecture to pastry.

So my wife and I, eager to enjoy the fruits of centuries of breeding, thought of roses in terms of hybrids with pedigrees, unusual shapes and exotic colors. First, we tried a Silver Moon, a climber, on trellises on the front of our house between the French doors. Silver Moon was a large, single, white rose. The blooms were gorgeous, but the vine grew so fast and in so many directions that soon we couldn't get out of the French doors. We had to get rid of Silver Moon.

In a thicket in our swamp, we found a volunteer dog rose. To atone for destroying Silver Moon, we cleared around the dog rose. Encouraged, it grew to a considerable shrub, being covered each spring with pink and white flowers and, each fall, with red hips.

But the dog rose, in a sense a by-blow, wasn't really cultivating roses in any true way. The true rose gardener raised floribundas and grandifloras, hybrid perpetuals, tea roses and hybrid tea roses in carefully tended rose gardens with perennial borders. We hadn't a suitable flat space for such a garden. But we did have a stretch on our terrace that would accommodate six bushes. We planted Vogue, Fashion, Fusilier and Mojave. The first three are floribunda, the last, a hybrid tea.

All of these roses were exquisite. They were also prey to every ill to which a rose can be susceptible. Japanese beetles loved them. They teemed with aphids. The cold of winter killed them to the ground unless we heaped on enough straw to cover them entirely. Diseases blotched and perforated their leaves.

The true rose gardener knows of these problems and is prepared and eager to cope with them. We were not true rose gardeners. We had too many other interests to allow us to maintain delicate roses. We neglected ours and all but one, a Fashion, succumbed to pests, diseases and hard winters.

The hugonis, however, continued to thrive with little attention beyond regular pruning.

Because we still liked roses, if we could have them without giving them constant attention, we cast about for what else we could plant that would be as rewarding and undemanding as the hugonis. Climbers, of course, but this would only lead us back to the

Silver Moon experience, for most climbers, unless pruned regularly and extensively, get badly out of hand.

Our search brought us to a beautiful catalog called *Roses of Yesterday and Today,* issued by Will Tillotson's Roses, Watsonville, California 95076. This catalog displayed the moss roses, 10 of them, and described them as strong growers and above average in hardiness. All were bush roses and all but one, the Waldtraut Nielsen, grew to between two and six ft. The Waldtraut Nielsen will go to 10 ft. or more.

The moss rose became a craze during the Victorian era, when people liked elaborate architecture, clothes, decoration and where possible, flowers. Moss, itself, was an enthusiasm of the age. Gardens had to feature extensive moss, and moss was used indoors in bowls of cultivated flowers and to garnish table decorations.

Where the moss rose sprang from is not clear. Twenty-four varieties had been listed before Queen Victoria ascended the throne in 1837. Most of these early ones must have failed in popularity, however, as all but three of the moss roses listed by Tillotson were developed during Victoria's reign (1837-1901). The Gabriel Noyelle, 1933, a double yellow with orange-salmon blossoms that have yellow bases, is a more recent hybrid. The Crested Moss and the Mme Louis Leveque, both 1827, must have been on the original list. Although the moss rose became an English craze, the names of most of the roses suggest they were French developments.

The distinguishing characteristic of the moss rose is that its buds look like balls of moss with the color peeping through. The buds continue to show moss until the bloom is fully open. Even then, turn a blossom upside down and there is the moss.

One of the most dramatic of these roses, the Crested Moss, is called the Chapeau de Napoleon. It is a large, pink rose, up to 2 in. in diameter, blooms for two months—May and June—and its mossy buds are shaped like Napoleon's hat.

When we read about this rose, we couldn't believe the Napoleon's hat bit, but we planted one, and the description is absolutely accurate. It does look like Napoleon's hat. A bush covered with such hats in various stages of opening is quite a sight.

The first time we saw it bloom, the yellow blossoms were so perfect and so exquisitely chaste, so contradictory of the bush's posture, that I nicknamed it The Tipsy Virgin.

To accompany Napoleon's Hat, we planted another moss, Salet (1854). It is nearly as heavily mossed as Napoleon's Hat, but is a deeper pink and much more fragrant. Foster Melliar, writing in 1902 about roses for perfume distillation, said: "The real odor of musk is to be found only in Salet – a Perpetual Moss Rose."

The Salet is not, however, the rose around which the French perfume industry began to grow in Provence during the 13th century. The perfume rose, known long before 1200, is *R. gallica officinalis,* the Apothecary's Rose. No one seems to stock or recommend it, but the description of it in Gray's *Botany* makes it sound like a semi-moss rose, so it may have been a predecessor.

The three hardy roses we have now, the Tipsy Virgin, Napoleon's Hat and Salet, give us blossoms from late April until first frost. The blossoms are not always plentiful, as only Salet blooms from July until frost, but we are reasonably content with our limited choice. We may try another moss. Tillotson offers, in addition to the ones I've mentioned, Alfred de Dalmas (1855) a pink; Comtesse de Murinais (1843) a white; Gloire de Mousseux (1852) flesh pink; Deuil de Paul Fontaine (1873) crimson black, purple and brown-red, and Nuits de Young (1851) dark grape purple. Beyond what Tillotson offers, the Bush-Browns list the Blanche Moreau, which sounds like the same rose as Comtesse de Murinais, and Old Pink Moss, one of the oldest, with heavily mossed buds and pale pink flowers.

The new Park catalog features a tempting collection of miniature moss roses: Mood Music, which changes color from pink to deep red; Fairy Moss, a deep pink; and Dresden Doll, a shell pink.

For people whose gardening interests are wide ranging and whose time is limited, we conclude that a selection of moss roses along with a hugonis or one of the other China roses: *R. rugosa, R. chinensis* 'Minima' (red) or *R. xanthina* (yellow) is an ideal and carefree combination. Tillotson offers the *R. rugosa* 'Magnifica' and the *R. hugonis.* Finding the other China roses may be more of an adventure.

Should you choose the *R. rugosa* 'Magnifica,' you will have an additional treat beyond the deep carmine, almost purple blooms. You will have the hips. Robert Rodale, editor of *Organic Gardening,* wrote of these hips in 1958: "No food produced in the garden comes anywhere near having the concentrated food value of rose hips, and *Rosa rugosa* hips are more valuable than those of any other rose."

●

ENDIVE:
The Well-Known Chickory

by John F. Gyer

Janet and I go through the annual crop of seed catalogs on long winter evenings to decide on vegetables for the coming garden. Several years ago a picture of large oval heads of blanched leaves caught my eye. They were titled Witloof Chicory.

"What is this like?" I asked Janet.

"Oh, that's Belgian endive," she said. "It makes a great salad and it's delicious braised with butter." She reached for Julia Child and was soon describing menus.

"O.K., let's try some."

Despite the description of dinners yet to come, I was a little apprehensive about anything labeled chicory. Back on the farm, before any weed killer other than elbow grease had been invented, chicory was the menace of our wheat fields. It grew from deep perennial tap roots into wiry branched flower stalks. The stalks bloomed and set seed over a long period that always seemed to center on harvest time. The tough chicory stalks tangled the combine's revolving mechanisms, while the green chicory seed heads fell through the screens and were harvested with the wheat. The green seed heads guaranteed us moldy grain if the harvest was not well dried before we stored it in the barn's tin-lined granary. We dried the grain with the natural draft of the west wind that blew over piles of wheat spread on the main threshing floor of the old barn. To be certain the piles dried evenly we turned them daily with short handled scoop shovels. This annual grain drying left me with a lasting impression that chicory meant work.

Fortunately, the people of the ancient civilzations around the Mediterranean and into Central Asia, the region where the chicories are native, saw them as more benign and useful plants. Of the nine or so species in this small genus of the composite family, two were more attractive than the rest for domestication. By the time of the pharaohs, endives *(Cichorium endivia* varieties) were in cultivation, but the witloof type chicory *(Cichorium intybus* varieties) was probably still gathered from the wild. Although both chicory species are described in botanical works of the mid- to late 1500's, the first formal record of cultivation for the witloof type was in 1616. By 1726 both endive and chicory were available from English seedsmen. They were probably grown in America about the same time.

The popularity of the chicories seems to have peaked in the mid- to late 1800's. M. M. Vilmorin [1883] lists twelve curled leaved endives, four broad leaved endives and seven chicories, a total of twenty-three forms. In 1978 a prominent American seed catalog lists only two endives and two chicories, a total of four forms.

differences between endive and chicory

During the summer the garden culture of endives and chicories is similar. By fall the end products are quite different. The endives and some broad leaved chicories are raised for their *foliage,* which can be used like lettuce. Witloof chicories are raised for their *roots,* which are forced in the fall and winter to produce the blanched oval heads that caught my eye in the catalog. Other chicory varieties have roots that are dried, roasted, ground and added to coffee or used as its substitute.

I have found that the advice for endive that McMahon gave over 100 years ago in *The American Gardener's Calendar* is applicable to witloof chicory in my plastic mulched, drip irrigated garden of the 1970's. He mentioned that seed sown too early is "very subject to run up to seed." Since chicory seed is small, about 26,000 seeds per ounce, McMahon suggests that it be sown "tolerably thin for when the plants grow too close in seed beds, they are more subject to start soon to seed." He recommends that when transplanting, "put in the plants a foot asunder every way." Both suggestions have proved to be good advice. If planted too thickly the seedlings quickly become scraggly and are prone to damping off. If crowded in the garden the mature plants are subject to various rots in wet weather.

I have had very good luck by treating seed with Thiram to reduce damping off. I start the plants in pots about the time peas are beginning to bear (about the first of June). When the peas have finished I clean off the vines and mulch, till in a little 10-10-10 fertilizer, re-mulch and set the endive and chicory in the space the peas have vacated. A gardener's dictionary of 1778 recommends spacing the plants in quincunx order. This is a pattern of one plant at each corner of a square and one in the center. The quincunx pattern is repeated until the row or bed is filled. It is a good use of garden space and is well adapted to my plastic mulching. The warm, weed-free soil and constant moisture from the drip irrigation provide excellent rapid growth. However, the finest growth and best flavor is produced by the short days and low temperatures of autumn. Endive and chicory generally prefer a temperature that ranges between daytime highs of 75° to 80°F and nighttime lows of 45° to 50°F.

Garden writers of the past spent great pains to explain how to blanch the growing leaves of both endives and chicories. According to Thomas Mawe in 1778 blanching is helpful because "It is the inner leaves of all the varieties that are the useful parts, which, when blanched white, to render them crisp and tender, and to reduce them from a naturally strong, to an agreeable bitter taste, are then fit for use." Although

the curly and broad leaved endives are naturally milder than witloof type chicories, they too can benefit from blanching. Endives growing in the garden are blanched simply by gathering the outer leaves over the growing heart and tying them with stout cord. The 1778 dictionary recommends "bass strings," that were derived from the inner bark of basswood trees. Their equivalent now is inexpensive bailing twine that is very handy about the garden and available at garden stores. The plants should be tied up only when they are fully dry because of the danger of rot if water collects on the new and tender central leaves. Blanching for about two weeks produces good results, but three weeks is the recommended time.

forcing in boxes

Witloof chicories are blanched by a different system. For early production the plants are usually large enough to force after mid-October. However, I prefer to dig our plants in late November or early December to give the roots time to store maximum energy reserves. The plants will not be hurt by light frosts, but overnight temperatures in the high 20's can damage the root crown.

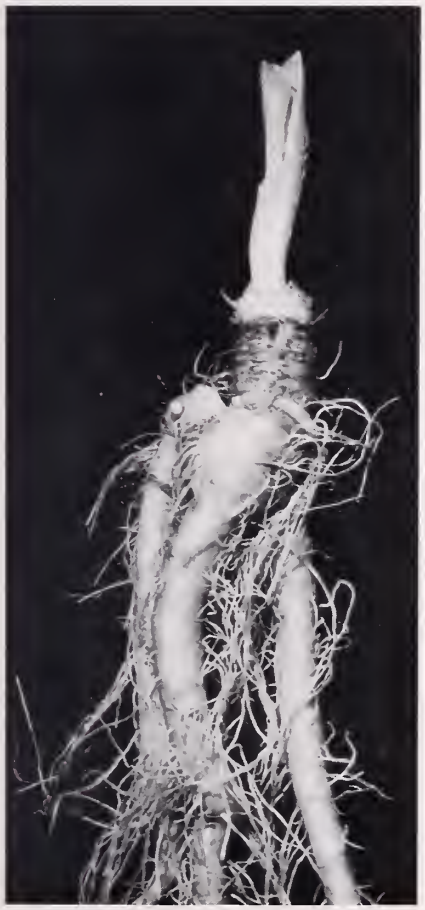
I prepare the roots by hosing off garden dirt and trimming back the old leaf bases until a growing point about two inches long remains. (See picture 1.) The reason for this severe pruning is sanitation. Bacterial and fungal rots can attack leaf bases and give bad flavors to the developing head.

After washing and trimming, the roots are stored in a well-drained container of moist cement sand. Again, this is a sanitary medium and minimizes the chance for rot. The sand container should be porous enough to allow aeration. One year I tried to force chicory in a 20-gallon plastic trash can. The results were poor and had bad flavor, I suspect because air could not easily get to the roots and growing heads. Now I use a 2-ft. cubic plywood box with a few holes drilled in the sides and bottom. (See picture 2.) The roots are set in place (picture 3), covered with sand for 10 to 12 in., and set aside. Our box resides under the propagating bench in a cool greenhouse where it receives drips of water draining from the mist system. The sand temperature of about 50°F is too low for fast growth, but roots put down in December produce forced heads by March. Higher sand temperatures reduce the forcing period. Temperatures near 60° should produce usable heads in about five weeks.

Witloof chicory can also be forced and blanched directly in the garden. In the fall plants can be cut back and covered with a mound of sand or packed loosely with salt hay held in place by boards, rigid opaque plastic sheets or similar material. The objective is to keep light and excess water away from the developing heads, and yet to let air circulate to the growing tips. Soil can be used for mounding, but at the greater risk of rot.

continued

1



Witloof chickory root washed, trimmed, ready for forcing. Note the 2 in. growing tip, the cut leaf bases, and the leaf scars that build up the crown during summer growth.

2

Witloof chickory roots set in sand in their forcing box. After all roots are set, their crowns are covered by 12 – 18 in. of sand. Note the breathing hole on the side of the box at sand level. The hole is covered by window screen to prevent sand leakage.

photos by author

Vilmorin's 1885 *The Vegetable Garden* describes a method for producing *Barbe-de-capucin,* forced succory or common chicory. The same method can be used to blanch dandelion *(Taraxacum officinale),* a remote botanical relative of the chicories. First take up the roots just before frost, wash them, and trim the leaves back to within one half inch of the growing crown. Next arrange the roots so that the forced, blanched leaves do not pick up grit from the sand that supports the roots during forcing. In Vilmorin's time the roots were layered with sand in forcing heaps. Because the growing crowns extended into the air from the nearly vertical sides of the heap, the forced leaves grew freely and stayed clean. On a smaller scale gardeners can accomplish the same effect with a sand filled window box. The chicory roots are laid horizontally on the sand with their crowns in air just beyond the outer edge of the side boards. A little additional sand piled on top of the roots will keep them moist and hold them in place. Alternatively the washed, trimmed roots are gathered into small bunches and inserted vertically into holes punched in a sheet of mulching plastic spread over a 6-8 in. deep bed of moist sand. When the roots are in place, they are left in total darkness. After three to four weeks at about 60°F (longer at lower temperatures) the blanched leaves are ready for the kitchen.

We have found that for witloof chicory the simple braising recipes given in Julia Child's *Mastering the Art of French Cooking* are the best. In these recipes the mild butter or cheese sauce does not overpower the chicory flavor. The inner leaves of the broad leaved chicory and the endives are a fine late summer and fall salad green. They offer a strength of flavor that complements late summer vegetables. One dressing that goes particularly well with the chicories is a vinegar-oil-honey carrier to which chopped bacon, onions or chopped egg can be added. In the winter this type of dressing can be stir fried with coarsely chopped endive or broad leaved chicory to produce an excellent vegetable side dish.

The easy culture of the chicories and the good foods they produce is beginning to change my early impression. The chicories no longer appear as intractable rogues but as a sturdy group that can be trained into useful citizens of a productive garden.

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John Gyer's hobby of botany frequently combines with his interests as a chemical engineer to increase the vegetable production of his New Jersey garden. John and his wife Janet have frequently shared their gardening adventures with *Green Scene* readers.

3

Forcing box with several breathing and drainage holes. The box is 2 ft. x 2 ft. x 2 ft. The holes are covered by window screen to prevent sand from spilling.

4

Blanched head of Witloof chickory. If the head is cut just above the root crown the dormant buds in the crown should produce another, but more leafy, crop of chickory.

THE EGGPLANT STORY

by Roberta Sladky

The Madde Apple of the 17th century is beginning to receive the culinary attention so long deserved in this country. Native to India and long known by Middle Eastern peoples, today *Solanum melongena,* the eggplant, is available year-round in the supermarket. The eggplant has come a long way since its 14th century rumors "of a rich, luscious fruit that enticed hungry travelers who at first bite went stark-raving mad."* *Mala insana,* the Madde Apple or Raging-Love Apple, was mentioned in Gerard's *Herbal* of 1633. Though admitting that Madde Apples were eaten freely in Spain and Italy, Gerard warned Englishmen about their "mischievous qualitie." In the 18th century Linnaeus placed the eggplant in the genus *Solanum* with the potato *(S. tuberosum),* the Jerusalem-cherry *(S. pseudocapsicum),* and the deadly nightshade *(S. nigrum).* Linnaeus avoided the specific epithet *insana* for the less controversial *melongena,* thought to be from the Greek word for eggplant.

Not only a delicate and versatile vegetable, the eggplant is also a striking garden ornamental. In fact, it was often used as such before the fruit was generally accepted on the table. The rough, hairy, somewhat prickly foliage makes a gray-green foil for the two-inch nodding flowers. Their violet corollas are rotate and five-lobed, with reflexed petals exposing five bright yellow stamens. The fruit, shining purple from inception, matures to a length of one foot with the majesty suggested by its royal color. The plant is a stout perennial herb in the sub-tropics, reaching two to three feet as an annual in the north.

The eggplant's cultural requirements are easily satisfied in the Delaware Valley, its most crucial need, a long hot growing season. Like tomatoes, eggplants must be started indoors from seed, or started plants may be purchased. Sow seed 8 to 10 weeks before setting the plants out. The best cultivars for home gardening include 'Black Beauty' 'Black Magic Hybrid,' a short season hybrid which matures 72 days from setting out; and 'Modern Midget,' suitable for container culture. Don't be afraid to try 'Long Tom,' a cucumber-shaped purple or the various white, green, and striped forms. They will provide variety in the garden as well as the kitchen.

Set the plants out 24 in. to 30 in. apart after the temperature is consistently above 70°. In a well-composted rich, warm soil the eggplant will thrive. No extra fertilizer is needed and in fact too much fertilizer will produce large, lush plants with no flowers or fruits. Eggplants are very sensitive to drought and weed competition and are good subjects for mulch, either black plastic or an organic material. Eggplants are particularly bothered by verticillium wilt, a disease that also affects its relatives, the potato and tomato. For this reason eggplants should not be grown near tomatoes or potatoes or in soil where the disease has appeared. Should verticillium wilt affect the crop, the best control is to avoid that ground in the future. Flea beetles and the Colorado potato beetle are the major insect pests on eggplant. Both can be controlled by dusting or spraying with malathion on leaf surfaces or as the label directs. Last season, my plants were exposed to an interesting pest. In August the eggplants began to disappear one by one. A very neat mound of soil remained, at the exact spot where the plants had been. It became obvious that moles had infested the garden when their characteristic tunnels appeared. They loved eggplant so much that they pulled the entire plants into the ground, so an eyewitness reported.

... eggplants should not be grown near tomatoes or potatoes or in soil where verticillium wilt has appeared.

When the fruits are about 6 in. to 9 in. long or 1/2 to 2/3 mature, and the skin is very shiny, they are ready for harvest. Be sure to cut rather than pull the fruits from the plants or the tough stems may tear. Three to eight fruits per plant is the average yield and that depends upon the length of the growing season.

Though eggplants are more common today, some people show the same fears about eating them as Gerard did in the 17th century. The following recipe has not only pleased eggplant lovers, but has also converted many unbelievers to the wonders of this elegant and versatile vegetable.

Eggplant Parmesan

Leaving the skin on, slice one large eggplant into ¼-inch slices. Salt and press between paper towels to eliminate excess moisture. Dip the slices in beaten egg and fry in oil or on teflon. In a large casserole alternate in layers as follows: eggplant slices, seasoned tomato sauce, grated mozzarella cheese, and toasted wheat germ mixed with equal amount of parmesan cheese. End with the cheese/wheat germ mixture. Cover the casserole and bake for about 1 hour in a 350° oven. Remove the cover and bake for another 15 minutes.

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Roberta Sladky graduated from the University of Wisconsin with a B.S. in horticulture and attended the Longwood Program at the University of Delaware until spring of 1977; she is currently completing her thesis. At present she is greenhouse manager at the University of Minnesota.

*Vernon Quinn, *Vegetables in the Garden and Their Legends* (Philadelphia: J. B. Lippincott, Company, 1942).

photos by Edmund B. Gilchrist, Jr.

Camellia japonica

PEONY-SIZED CAMELLIAS

. . . It's done with hormones

by Camilla F. Williams

Just one drop of gibberellic acid beside the bud and most species of camellias will grow elongated cells, producing a huge flower. In the South this practice is common and there are classes at shows for "gibbed" and "non-gibbed" blooms. It's fun, I think, to gib about half the buds, as I like to give my blooms away. Nobody wants to cope with a small cabbage pinned to one's jacket, but a big one looks nice floating in a bowl.

The conditions for raising camellias are a bit hard to come by. I have a shady, cold, ramshackle greenhouse and they do well in it. I set the thermostat at 55° and range the pots around the edge, right next to the leaky old panes. As long as the pots never dry out, the plants seem to thrive. An old sun porch, refrigerator room or breezeway would probably do nicely.

As soon as the flowers are all gone, I prune and then watch the new leaves shoot up. Camellias will survive a slight freeze, but the tender new leaves won't, so you have to wait until danger of frost is past to put them outside. In the fall, you can leave the pots outside as long as your buds are still closed. In the summer dappled shade seems best to develop their buds. This is the most important watering time. I sink my pots in a trench filled with peat and sprinkle the whole plant daily. I fertilize weekly with Peter's soluble fertilizer, about three tablespooons per gallon.

When you buy your plant, take it outside and bareroot it by gently hosing off all the soil. If the root system is choking itself, try to open it up. Choose a plastic pot (ugh!) that is no more than an inch bigger than the root system. (Plastic keeps the plant from drying out, but if you hate plastic, you can put the offender inside anything you fancy, as long as it drains.) First, put a couple of inches of pebbles and shards in the bottom, then fill in around the naked root just up to the original soil line. No higher. Keep the soil level 1½ in. below the top of the pot. A good soil mixture is 1/3 part two-year

Camilla Williams gibs her largest plant.

Disbudding produces larger blooms. Here the author removes all of the buds but one.

old cow manure or potting soil, 1/3 coarse pine bark, 1/3 peat. Try to achieve a pot that never dries out, but allows excess water to drain out readily. Potting is best done after blooming.

Now for the gibbing: When you first see buds that are as big as a "Q-Tip" (for me this is late August and early September), gently twist out the leaf bud, next to the flower bud, leaving, with most species, a tiny cup. Deposit one drop of gibberellic acid in the cup. You may have to wait for some of the buds to develop later in the year in order to gib them, but this only serves to lengthen the blooming season. Try to leave only one big bud per branch or section of big branch; debud the rest. If you buy early and late bloomers you can have flowers from October through March. I seem to have more on Valentine's Day than any other time, but I never seem to have a really good plant to enter in the Flower & Garden Show.

The camellias pictured here are *Camellia japonica.* For beginners, one can hardly fail with a 'Betty Sheffield' variety, or a 'Park Hill Tomorrow' relative. I recommend plants grown in South Carolina, Georgia or Louisiana. They come with healthy trunks and tend to continue that way.

Gibbing will hasten your blooms, so if you gib three weeks before a party, you should have beautiful blooms to bring into the house for the big event. Gibbing big buds that are ready to burst has little effect, so don't bother.

Until this year, the South Georgia Camellia Society has air-mailed marvelous 5 cc plastic vials with hypodermic needles in the cap. Alas, Uncle Sam has forbidden mailing "Gib" across state lines, so just use the squeeze bottle that comes for eye drops and have your druggist make up the solution (see box). Senator Strom Thurmond (Chairman of the Senate Agriculture Committee) is trying to have an exception made to the law since gibberellic acid is not a pesticide.

I once met a man from North Carolina who was what he termed a "camellia nut." He said he only watered his

continued

Twist out the leaf bud next to the flower bud.

Place a drop of acid in the cup formed when leaf bud is removed.

The results.

greenhouse once a month. I've never been able to get the climate so perfectly balanced, so I check every day to see if anything is approaching dryness, and end up watering two or three times a week. In the North, we are free of all the myriad blights that the South is constantly fighting, so just spray as you would any other plant in the greenhouse (we use Isotox) and mix some Volck (oil) with the spray in the spring and in the fall.

. . . you can have flowers from October through March. I seem to have more on Valentine's Day than any other time, but I never seem to have a really good plant to enter in the Flower & Garden Show.

It's curious that camellia raising, breeding and showing seems to be predominantly a male hobby below the Mason-Dixon line, and in Japan, France and Australia. Wouldn't it be nice to have some camellia nuts in the North! It seems to me that camellias give more show and more cheer when its cold and miserable than any other plant for the amount of time needed to tend them. I'd like to start a Camellia Society in Pennsylvania, so if you are interested, call PHS (WA 2-4801) and we'll start one.

The 2% Solution

To make a 2% solution of gibberellic acid dissolve one four-gram tablet of Elanco Products Co. (or Merck or Eli Lilly) potassium gib tablets* in 200 cc distilled water (one ounce is equal to 30 cc water). Allow one hour for the tablet to dissolve, shaking several times, then pour through coffee filter paper. The solution should be clear. Keep refrigerated. When slight discoloration appears after approximately six months, discard.

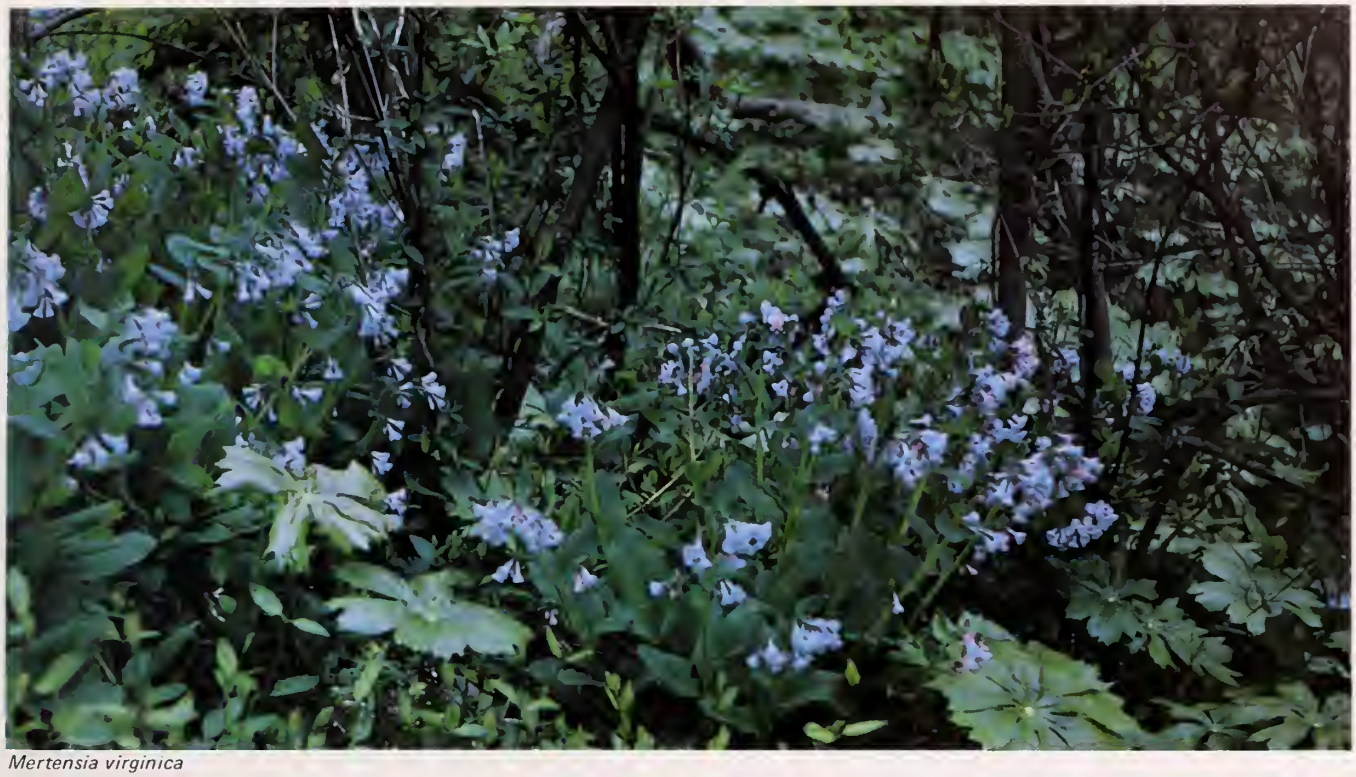
*available at drug stores

●

Camilla Williams started to raise camellias when nothing else would do well in her drafty greenhouse. Outside the greenhouse, she most enjoys working with box; she likes its appearance, enjoys propagating it and says it's manageable. She looks for simplicity and line, as well as an emphasis on low maintenance in her garden; the distribution of large oaks around the house has dictated a mostly green garden.

Ground Covers for Shady Areas

by Elizabeth B. Derbyshire



photos by R. Derbyshire

Mertensia virginica

Ground covers can reduce grass cutting, decrease the hours of weeding and trimming, prevent erosion and provide vegetation on muddy unsightly areas. A shady lawn can be difficult to maintain —ground covers, on the other hand, provide year-round interest by the use of ajuga, ivies or turf-lily. Ground covers can add color and distinction with the textures of the leaves in lamium and the small, rounded coarsely toothed leaf of the strawberry begonia. The boldness of skimmia and the hemlock cultivar Cole's Prostrate can be effective focal areas in your garden design.

Ground covers can be annual or perennial, deciduous or evergreen. They usually spread by prostrate or underground stems. Some produce delicate carpets such as the kenilworth ivy, and some, the ostrich fern, can become invasive in a limited area. Learning to know the right plant for the right place is one of the pleasures I find in gardening. The diversity of ground covers earns them an important consideration in every garden.

I have prepared three lists of ground covers: (A) for problem areas; (B) new and easy; and (C) more challenging plants. These categories are drawn from my own observations and experiences. They are not complete lists and we will welcome any additions our readers may suggest.

problems

Some of your problem areas might be:

- Under a tree where exposed roots are in competition with your plant material. Establishing a lawn around trees can be frustrating because of inadequate sun or moisture.
- Ugly bare spots whether near the kitchen door or against the side of your house.
- A slope that you try to mow each year.

All of these problems can be solved by using one of the ground covers in Group A.

Preparation of the site for the problem group is of utmost importance. Where roots are exposed use a load of good topsoil and incorporate 5-10-5 into the soil. In the other areas I recommend spreading 2-3 in. of both builder's sand and peat moss, then turning the soil to 6-8 in. Rake into this a sprinkling of 5-10-5 and a 1-in. layer of dehydrated cow manure. Pachysandra, lily-of-the-valley, and *Lamium galeobdolon* are good candidates for these areas. On the steep slope both periwinkle and ivy spread effectively with their small rootlets attaching themselves into the soil. All of these, with the exception of lily-of-the-valley, present a pleasing picture throughout the year with minimum upkeep.

For late summer color in the problem areas the variety of hostas can give you a succession of bloom into late September. Liriope propagates readily in spring and presents its lavender or white spike in late August or September.

new and easy

Section B includes new and easy plants. New plants are those I have recently been introduced to by friends and on garden visits. The easy ground covers are ones that have thrived in my woodland area. One plant that I have been recently introduced to is the small *Sedum ternatum,* which makes a nice edge in the small garden. The gray green succulent whorled leaves are attractive throughout the year. It prefers a gritty rocky neutral soil in high shade. The delicate *Viola applachiensis* is growing in a part of my garden reserved for smaller ground covers. I have

continued

Ground Covers

mixed sand and woodland humus in the planting area, and the carpeting violet with a delicate flower seems to do well in a western exposure and afternoon sun. This specimen came to me two years ago as a member of the Delaware Valley Chapter of the American Rock Garden Society, a good group to know.

It is difficult to pick a favorite in the spreading group of ground covers. *Tiarella cordifolia,* the foam-flower, has carpeted a large area under a white pine tree. Its mass of white flowers is a pleasing combination with blue woodland phlox and the more delicate sweet woodruff. The background in this area of the garden is clumps of Christmas fern. This planting is on a gentle slope promoting good drainage and the woodland soil has a mulch of leaf mold that retains moisture. The afternoon sun is adequate for good bloom and healthy plants.

Virginia bluebells and the golden ragwort make a nice combination in a large area. Mertensia disappears completely by June and the shiny rosettes of the ragwort provide a good ground cover. For summer bloom Oswego tea can be planted nearby; its red flowers are attractive to the hummingbirds. These do best in a moist situation, but have adapted to drier areas of the garden.

the challenges

To me the true test of meeting the challenge would be the survival of the plant for two or three years and its ability to spread. These are the plants for a special area, away from the more aggressive ground covers and in a site where you can observe their growth and development.

Box huckleberry, *Gaylussacia brachycera,* is candidate for the oldest living plant in the world. This rare evergreen with small shiny rounded leaves grows in an acid woodland humus. My specimen on a gentle slope in light shade of white oak does not seem as vigorous as a plant I observed in the garden of Marnie and Bill Flook of Greenville, Delaware. Marnie's plant receives several hours of sunlight and is kept moist throughout a dry growing season.

Shortia galacifolia, oconee-bells, a native of the Appalachian mountains is a blue ribbon winnner. A charming plant from the dainty white bell-like flower in April to the rich texture and color of the evergreen leaves in the fall. It needs an acid peat in a well-drained woodland soil with an oak-leaf mulch and does well in light shade. The woody creeping rootstock, when well-established makes good clumps that spread effectively as an outstanding evergreen cover. Perhaps the challenge for shortia is in providing the proper cultural requirements.

Whether it be planting a problem area, the excitement of discovering new ground cover for your garden, or growing a plant that will be a challenge, the results attained can produce a garden of textural beauty and year-round interest with minimum upkeep. Why not plan to use more ground covers in your garden in 1978.

GROUP A

Plants for Problem Areas

Plants easy to establish in problem areas. They spread readily, do not require special soils and tolerate either partial or high shade.

	Observations
POLYPODIACEAE	
Matteuccia struthiopteris Ostrich fern	Will grow to three feet; invasive, these fiddleheads are the only ones edible.
LILIACEAE	
Convallaria majalis Lily-of-the-valley	Fragrant spring bloom, does best in some sun, spreads readily.
Hosta spp. Plaintain lily	Foliage as well as flowers produce an interesting textural effect.
Liriope spicata Lily-turf	Evergreen, grass-like foliage, mat-forming, withstands dryness.
Ophiopogon japonicus Lily-turf	Similar to above, but flower spike concealed by foliage.
BERBERIDACEAE	
Epimedium grandiflorum Barrenwort	Delicate racemes of small yellow or red flowers in spring, good foliage, sometimes evergreen.
BUXACEAE	
Pachysandra terminalis Japanese spurge	Evergreen, white spike flower in spring, variety variegata spreads slowly.
ARALIACEAE	
Hedera spp. Ivy	Many good varieties, slow growth from small leaved forms.
APOCYNACEAE	
Vinca minor Periwinkle	Evergreen, trailing, alba and rosea good varieties, glossy foliage throughout year.
LABIATAE	
Ajuga reptans Carpet bugle-weed	Several good varieties, nice textural effect, tolerates walking on.
Lamium galeobdolon Yellow archangel	Good green and white foliage throughout the year, can be invasive.
Lamium maculatum Dead nettle	Spring bloom, the lavender and the white form, grows well around perimeter of trees.

GROUP B

New and Easy

B-1 Delicate B-2 Large Foliage

These plants like a friable soil with leaf mold and humus. Partial or high shade is conducive to bloom depending on the species.

B-1 DELICATE

	Observations
LILIACEAE	
Maianthemum canadense Canada mayflower	Flower small, white raceme in late May, humus rich mulch, slightly acid soil.
IRIDACEAE	
Iris cristata Crested dwarf iris	Spring bloom, matforming rhizomes in woodsy soil, will tolerate dry barren acid soil.

List prepared according to Linnaean System of classification.

ARISTOLOCHIACEAE	
Asarum europeum European ginger	Evergreen clump with shiny cordate leaves 1-2 in.
Asarum shuttleworthi Southern ginger	Evergreen, leaves mottled with silver and white 2-3 in.
BERBERIDACEAE	
Epimedium niveum White barrenwort	Dainty white flower spike in May; foliage attractive throughout year.
CRASSULACEAE	
Sedum ternatum Triplet stonecrop	White star-like spring bloom, shady rocks in light gritty soil.
VIOLACEAE	
Viola appalachiensis	Small flower in May, matforming, light moist humus.
SAXIFRAGACEAE	
Saxifraga sarmentosa Strawberry-geranium	Evergreen rosettes, prefers no direct sun, excellent cover for small area.
ROSACEAE	
Waldsteinia fragarioides Barren strawberry	Evergreen, leaves have interesting texture, humus rich, slightly acid soil.
LABIATAE	
Conradina verticillata Conradina	Small prostrate shrub, gritty light soil with good drainage, some sun.
SCROPHULARIACEAE	
Cymbalaria muralis Kenilworth ivy	Lavender flower in June, very delicate, good between rock crevices.
Mazus reptans Mazus	Pale purple bloom in May and June, moist soil in semi-shade, can become weedy.
RUBIACEAE	
Asperula odorata Sweet woodruff	Delicate white flower, spreads readily in moist woodland, herb for maywine.
Houstonia serpyllifolia Creeping bluet	Blooms April to July, acid humus in good supply of moisture, matforming.
Mitchella repens Partridge-berry	Evergreen creeper, June delicate fragrant pale pink flowers, red fruit in fall, neutral to acid soil, high shade.
CAMPANULACEAE	
Campanula poscharskyana	Blooms May into July. Pale blue flower. Easy culture in neutral soil, likes lime.

B-2 LARGE FOLIAGE

	Observations
POLYPODIACEAE	
Polystichum acrostichoides Christmas fern	Evergreen, does well on slopes in oak woodlands.
PINACEAE	
Tsuga canadensis cv. Cole's Prostrate	Evergreen dwarf conifer for an intimate part of the garden, needs shade.
ARISTOLOCHIACEAE	
Asarum canadense Wild ginger	Not evergreen, interesting spring maroon flower pollinated by slugs. Good foliage through summer.
RANUNCULACEAE	
Xanthorhiza simplicissima Yellowroot	Deciduous low shrub 1-2 ft.; yellow foliage in fall, for banks and moist areas.
RUTACEAE	
Skimmia reevesiana Skimmia	Evergreen shrub, monoecious, light soil, resistant to pollutants.
BUXACEAE	
Pachysandra procumbens Alleghany spurge	Not evergreen; a nice addition to the wild garden, early spring flower.
Sarcococca humilis Sarcococca	Evergreen shrub, late March fragrant bloom, no direct sun.
SAXIFRAGACEAE	
Tiarella cordifolia Foam-flower	Good May bloom, likes acid woodland humus, spreads easily.
POLEMONIACEAE	
Phlox divaricata Wild blue phlox	Likes a humus rich soil, good combination with azaleas.
Phlox stolonifera cv. Blue Ridge	Cluster of pink flowers on 6-in. stem in spring, matforming at edge of woods.
Polemonium reptans Greek valerian	Pale blue flowers in May, does well in moist lowland area, spreads readily.
BORAGINACEAE	
Mertensia virginica Virginia bluebells	Tuber, May bloom, best in bottomland but adaptable in a shady garden.
Pulmonaria officinalis Lungwort	Small blue flower in spring, large leaves, attractive for bold accent.
LABIATAE	
Monarda didyma Oswego tea	Red summer bloom, grows 2-3 ft. high; spreads readily in sun or shade.
VALERIANACEAE	
Valeriana pauciflora Valeriana	Pinkish bloom in May and June; spreads readily in rich, moist woods; adaptable.
COMPOSITAE	
Chrysogonum virginianum Goldenstar	Yellow star-like flower from May into July; does well in most soils.
Senecio aureus Golden ragwort	Spring yellow bloom, basal rosette of leaves attractive year-round; can be invasive.

continued

Ground Covers continued

Mitchella repens

Cymbalaria muralis (Kenilworth ivy)

GROUP C

Challenging Plants

This group demands great experience in growing. Most require an acid soil with plenty of leafmold and woodland humus, good drainage and constant moisture. I suggest propagating from seed or cuttings so that they establish their root system in compatible soil for their growing needs, creating their own mini-habitat.

	Observations
RANUNCULACEAE	
Coptis groenlandica Goldthread	Delicate white flower in spring, likes a cool damp woods in acid peaty soil.
ROSACEAE	
Dalibarda repens Dalibarda	Small white flower late spring, needs a cool bog garden.
CELASTRACEAE	
Pachistima canbyi Pachistima	Evergreen, well-drained neutral soil in open shade.
CORNACEAE	
Cornus canadensis Bunchberry	Does well in more northern areas in moist, peaty, cool, acid soil.
ERICACEAE	
Epigaea repens Arbutus	Trailing evergreen, fragrant pink bloom in early spring, acid wooded slope and sandy acid loam.
Gaylussacia brachycera Box huckleberry	A peaty, sandy, humus rich soil with good drainage, will tolerate some sun.
Gaultheria procumbens Wintergreen	Light sandy acid soil, slender stems creep underground.
DIAPENSIACEAE	
Galax aphylla Galax	Evergreen, shiny leaves bronze in fall, moisture and acid mulch.
Shortia galacifolia Oconee-bells	Evergreen, early April bloom, needs acid leaf mold and good drainage.
CAPRIFOLIACEAE	
Linnaea borealis Twinflower	Trailing, delicate, fragrant, pink flowers in pairs, named for Linnaeus, a real gem.

Elizabeth B. Derbyshire is an interpretive naturalist, horticulturist, lecturer and field trip leader. At present she is coordinating the development of the nature area at Springside School, Chestnut Hill, through a grant from PHS. She contributes to the Morris Arboretum *Bulletin* and *Trailguides*. She is an alumna of the Arboretum of the Barnes Foundation and trustee of Bowman's Hill Wildflower Preserve.

photos by author

Beach plum fruit *(Prunus maritima)*

beach plums go inland

by Bebe Miles

PHS member Bebe Miles is author of five gardening books, all book club selections. Her two latest are *Wildflower Perennials for Your Garden* (Hawthorn Books, 1976) and *Bulbs for the Home Gardener* (Grosset & Dunlap, 1976).

Anyone with New England roots knows that beach plum preserves rate right up there with penicillin and chicken soup as a nostrum for nearly everything from melancholia to dyspepsia. They are also a taste treat par excellence. But what to do if one lives far from beaches?

Why, the same thing one does for raspberries and leaf lettuce and all such delicacies the grocery stores ignore: raise your own. Besides the summer harvest of fruit, you'll enjoy the shrub's lovely white bloom in spring, and the foliage will brighten your fall with a deep brownish purple splash.

Bushes are stocked by several New York and midwestern nurseries. Look under the miscellaneous fruit for *Prunus maritima.* Buy at least two to insure adequate cross pollination.

It will take about five years for the bushes to mature enough for a plentiful supply of fruit, but you'll harvest some before then. Since the bushes tend to sprawl, allow enough space for each to have at least five square feet. Occasional pruning will easily keep beach plums under six feet for handy picking. They will, incidentally, take far more severe winters than anything the Delaware Valley ever endures.

continued

Flowering beach plum

Beach plums should get nearly full sun all day. Accustomed as they are to the inhospitable seashore climate, they do well in thin, poor soil and windswept areas. Ours are thriving in terrible clay, which is sometimes too wet but more often dreadfully dry. The only special treatment they ever get is an annual mulching and a couple of deep waterings if July is too dry. This latter is to insure a good fruit crop.

About the size of a cherry, the fruit is picked after it turns a dull purple. Don't worry if one side is still red; some less ripe plums improve flavor and make for better jelling.

Our bushes ripen over a period of several weeks in August when it is too hot and muggy to do extra cooking. We pick them carefully so there is no debris attached and stuff each gathering, without washing, into plastic bags which are immediately popped into the freezer. Then on some cool fall day when the press of garden chores is less, we do our final processing.

Beach plum afficionados have all sorts of recipes, but we concentrate on jelly. Our two bushes give us enough for a full year's supply of this queen of jellies plus some extra for special friends.

To make beach plum jelly: put a cup or so of water in a large cooking pot, dump in as many frozen or fresh plums as it will hold and bring slowly to a boil. Simmer about 20 minutes until fruits are beginning to separate from the pits. Put it all into a jelly bag and let drip all night. Never squeeze the bag.

In the morning throw what remains in jelly bag into the compost and make your jelly from clear juice. I use Sure-Jell and follow the directions for plum jelly. This yields a lovely, clear red concoction which tastes somewhat like grape but better. Home-made as above, it is a full-bodied jelly too. A far cry from the diluted substitutes available commercially at awful prices.

If freezer space is at a premium, you could make batches of juice as you pick in summer and freeze just the juice until it is time to make jelly. You can safely add at least half a cup of water to the concentrated juice if you are slightly short of the amount needed for a full recipe.

Remembrance of the pleasures of this ambrosia on a winter morning is incentive enough to keep me faithfully picking through the dogdays of August. One cannot buy such satisfaction.

●

Saxifrages:
THE GREAT MYTH

by Lee M. Raden

Lee Morris Raden has had a year in his new alpine house and his experiments with hummock gardens and their microclimates continue to encourage his great expectations for growing high alpines in the Delaware Valley.

Photographed by Edmund B. Gilchrist, Jr., in Phoenixville area in January in Alpine House.

Why do we, as gardeners, tend to take the plants that are our favorites and intimidate the uninitiated with our proven superiority in growing these treasures. As a long-standing member of the rock garden fraternity, I sit by somewhat bemused by the jargon and double-talk surrounding the difficulty of growing saxifrages, the so-called "backbone of rock gardens," the "rock-busters." The genus Saxifraga has approximately 400 species and thousands of varieties and hybrids. Part of the mystique is everyone wants to get one of the hybrids named after himself, herself, or dear Aunt Tillie. That leads to much confusion and a great deal of sameness, particularly in the section Kabschia.

Nine of the ten saxifrages that I selected can be grown outdoors in the latitude of Philadelphia. Most of them will require planting on the east side of the house and protection from winter winds. A generous mulch of pine needles in November will bring most of these plants through our winters. A word of caution: it's not our winters that kill these treasures, it's our summers with the excessive humidity. The sun slanting through the moisture-laden atmosphere magnifies the droplets of water, which burn the plants like a magnifying glass. Please remember, an eastern or northeastern exposure will be best for all plants that are mentioned in this article.

continued

▲ *S. stolonifera* (Syn. *S. sarmentosa*). The local naming of plants (mother of thousands, wandering Jew, strawberry geranium and on and on) only confirms what the "latinists" have been saying for years — call the plant by its botanical name and avoid confusion. Many people feel that this saxifrage is only a house plant and grow it as such. It is, however, hardy and a wonderful ground cover. Try it. And if you are lucky enough to find variety rubra, with a very red leaf, you indeed have a striking addition to your high-shade areas.

▼ *S.* X *urbium (S. umbrosa)*. This plant has been cultivated as far back as the 17th century. It is a fantastic, rather slow-growing ground cover and the English have hybridized and improved it. The 'Primuloides' are some of the best. 'Elliott's Variety,' 'Clarence Elliott,' and 'Variegata Aurea' are all good plants. My favorite is alba; the pure white flower is exquisite in its daintiness.

▲ *S. fortunei.* A Chinese plant that was collected in the 1860's. How many of us long to be able to visit China or have some new great expedition find new Chinese flora. I've been told that there have been no new explorations since 1912. What a challenge to all plant lovers. At any rate, this gorgeous plant has leaves that are glossy, rounded and about 3 in. in diameter, with an underside of bronze-red to deep red. When it flowers in October, the wonderful white flowers are produced approximately 10 in. above the foliage with unequal petals in that the five narrow, unspotted petals have two that are very long and make the flower look somewhat orchid-like. Unfortunately, I had a power failure in the alpine house and it forced the plant into dormancy before a good picture could be made. If the dwarf variety, obtusacuneata, can be grown along with the standard plant, you have a striking contrast as the variety has leaves only ¼ in., rounded, with flower stems and flowers all in the same small proportion.

▲ *S.* X *andrewsi.* This Irish native is a natural hybrid between *S. hirsuta* dn. *S. aizoon.* It has natural hybrid vigor with a superior foliage that is long and narrow, sharply-toothed with a certain amount of lime encrustation like one of its parents, *S. aizoon.* Interestingly enough, this plant is widely used in England and France as a ground cover for war cemeteries.

▼ *S. hieracifolia.* A large rosetted plant found in damp woodlands in the mountains of Europe. Its flowers are insignificant, but the light green, fleshy rosettes add striking contrast to any woodland planting.

▲ *S. biternata.* This is an outstanding, rarely-seen, superior saxifraga that comes to us from the mountains of Spain, principally the Sierra-Nevadas. The leaves look like a large variety of parsley and have much the same color and texture. The plant is approximately 6 in. across and in early summer beautiful, pure white flowers stand out above the foliage. One of the interesting features of this plant is that it has the ability, after flowering, to develop bulbils in the axils of the leaves where young plantlets stay attached to the parent plant and these can be rooted in moist sand. This particular plant has not been grown ouside in Philadelphia but has been grown in a very cold alpine house and has been wintered in some of the coldest parts of England.

▼ *S. caespitosa.* A true arctic plant it is circumpolar in its distribution. It looks very much like one of the tight, mossy saxifraga and this is its strong point. It forms tight low clumps that give the garden an appearance of being well-kept. Like many good mat plants it is much to be desired. Treat it like a semi-ground cover and cut the insignificant flowers as they appear.

▲ *S. stribryni.* This is one of the so-called "hard" plants, the rock gardener's 'Engleria' of the Kabschia section. It comes from the mountains of Greece and Bulgaria. The photograph just begins to show the red boss (part that looks like a bloom) growing from the center of each flowering rosette, and as it progressively lengthens a wonderful velvety-red inflorescence rises to approximately 6 in. A small plate of glass or a cloche over the plant will protect this unique flowering.

▼ *S. jenkinsi.* The photograph shows what many words cannot describe. It is perfectly hardy outdoors in a protected spot and forms a hard little hummock. In mid-March flowers from lilac-pink to deep pink cover the plant in such profusion that the foliage cannot be seen. Its neat appearance all year-round adds joy to any garden.

▲ *S. retusa.* This plant is found at relatively low altitude, 6,000 ft. in the European mountains. It does not form a tight mound but rather creeps along a stone mulch. Its real glory is in early spring when on ½-in. stems its red flowers open with purple stamens and orange anthers. It is somewhat miffy (temperamental) in that it cannot be sun-baked nor water-logged. Once again, these conditions can be met by northern and eastern exposures and a very gritty soil.

I know that an article like this prompts many people to say that these plants are not available in Philadelphia, but they are. Many garden marts have *S. stolonifera* and *urbium.* Many seed catalogs carry some of the other species mentioned and members of the American Rock Garden Society and the library of the Pennsylvania Horticultural Society have available sources.

●

Brooms that Grow in the Garden

Plant, grow, harvest, and dry broom corn to make your own brooms.

by Lorraine Kiefer

photos by Ted Kiefer

Start the broom making process by sorting the "sweeps" according to size. Pick 25-30 large sweeps and scrape the seeds from the stalks as shown. Use a knife or small saw and work on a table or bench, using pressure as the knife is pulled over the seeded end of the sweep. (Author pictured.)

When the oak leaves are small and pink, resembling a mouse's ear, we will get ready to plant broom corn. Our first experience with growing the corn and making brooms was so much fun that we can't wait to start again. The brooms we gave as gifts this past Christmas made such a hit that we had to promise many for next year.

Broom corn looks and grows much like sweet corn, except it does not produce ears. It's in the Sorghum family with *Holcus sorghum* the variety planted for broom making. It is more closely related to milo than to corn.

When the ground is warm and the tomatoes, melons, beans, and sweet corn have been planted, it is time to plant broom corn. Many of the old-time gardeners in our rural South Jersey community have told me, ever since I can remember, that oak trees indicate the proper time to plant corn in our area.

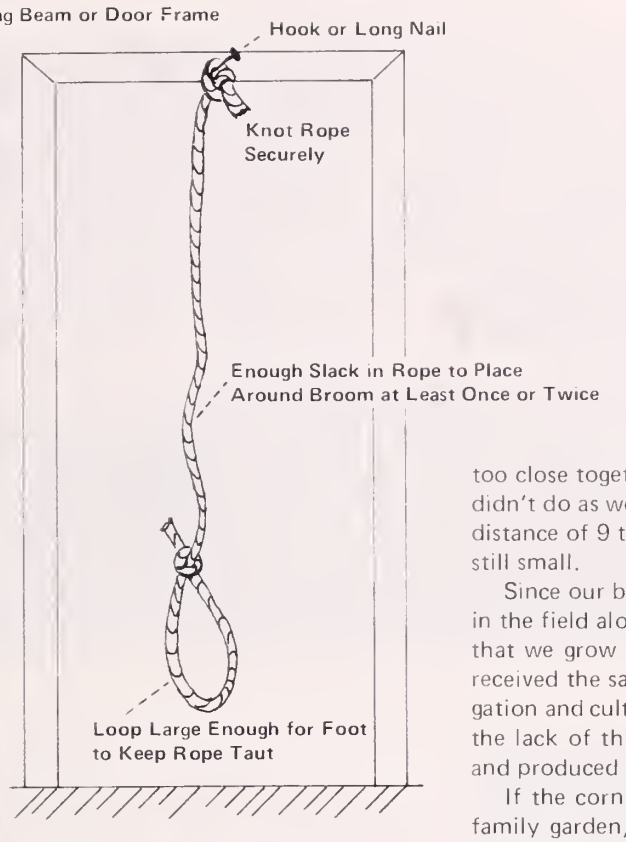
Since the oaks are one of the last trees to leaf out in our woods, they must be nature's signal that the weather is warm and settled. We planted our corn just a bit later last year, doing it Memorial Day weekend; however, we could have held off till mid-June.

Like corn, sorghum reaches a height of over 6 ft. and does best if planted in double rows. It also needs a fairly good soil with plenty of moisture. Since our fields are rather sandy we incorporate organic matter in the form of leaves, straw, manure, and a cover crop of rye grass each year before we till the soil.

It is a good idea to use about one-half pound of 5-10-5 fertilizer for a 25-ft. row of the corn. Since the weather was quite dry, we had to irrigate on a regular schedule last spring. When the plants were about knee high they were given a second dose of fertilizer.

One thing I plan to improve this season is the manner and amount of thinning we do. Last year we thinned randomly, sometimes leaving the plants

Soak the stalk part of the sweep in warm water to make it pliable. Drain the stalks before using, but don't allow them to dry out.



A large nail or hook in the ceiling holds the rope or "third hand" in broom making. Enough slack is needed to wrap this rope around the broom, but then it is kept taut by pressure applied by the foot on the bottom of the rope. Notice the large loop through which the foot is placed.

Wooden pegs through the end of maple handle anchor the twine and help hold the sweeps. Notice how the sweeps are being fitted between the pegs. (John McGinley pictured.)

too close together. The crowded plants didn't do as well as those thinned to a distance of 9 to 12 in. while they were still small.

Since our broom corn was planted in the field along with nursery shrubs that we grow on a part-time basis, it received the same care. The regular irrigation and cultivation compensated for the lack of thinning to some degree and produced a nice crop of "sweeps."

If the corn is to be grown in the family garden, start your mulch well after the soil warms up. The mulch will save hours of weeding and help to conserve the moisture this thirsty plant needs.

Our corn was harvested when the seed "heads" began to fill out and take on the look of plumes. Although we cut our sweeps and hang them in a shed to dry, they can be dried directly on the plant. If this method is used, break stalks so they hang down from the plant to dry. If the weather is unusually wet or humid they won't dry as well on the plant as inside.

After about three weeks the dried heads can be cut at the break and tied in bunches to be stored until needed. If the sweeps are dried inside always hang them upside down so they will dry straight. If left upright on the plant they will bend and curl and won't be suitable for broom making. (These irregular sweeps can be saved for dried arrangements.) Some plants will continue to produce "sweeps" until frost if not cut back too far.

Once the "sweeps" are dry, scrape the seeds from the "heads" with a dull knife or saw. I find that the sweeps will come clean if they are placed on a board or hard surface and scraped (shown in picture). Once the seeds are removed the thin straw that will make up the broom will be all that remains on the stalk or sweep.

Our crop of three 25-ft. rows made

continued

After all the sweeps are in place, a band of twine is tied around them. Use a long, curved carpet needle to lace up to the end.

The finished broom is at home on any hearth.

several brooms, and there was enough left for some small whisk brooms. We saved the box or so of seeds scraped from the heads for next year's crop or to be fed to the birds. You might even tie a small bag of seeds on any gift brooms you make.

For a large broom gather about 25 to 30 "sweeps." Soak the stalks in warm water while you assemble the other materials you will need. A carpet needle and a good strong twine will be needed to sew the broom together. Any type of handle can be used. I've seen them made from simple bark covered "branches" and even old broom handles. The ones I prefer are carved a bit from a branch or sapling. This added step gives the broom a bit of old world charm.

In preparing the handle, taper the one end of the stick with a knife or carving tool. Put a few wooden pegs or even a nail through the bottom 2-4 in. of the handle. These pegs are used to anchor the twine and hold the sweeps.

Fit the damp sweeps around the pegs on the handle and wrap them several times with the twine (see picture). Once they are anchored, you might try some weaving if you are feeling creative.

Fitting the sweeps on the handle will be much easier if a rope is available to hold the broom while you work. Hang the rope from a hook in the ceiling or door frame (see illus.). Wrap the rope around the part of the broom that is being fastened. Tie a loop at the end of the rope large enough to place your foot in and high enough from the floor so that pressure can be applied to tighten the hold on the broom. The rope will act as a third hand, freeing your hands to work on the broom.

Once the brooms are finished they can be used on the hearth or decorated. Ours hangs on the fireplace from a hook in the mantel and really gets used. Every bit of bark, ash, and debris on the hearth is quickly swept into the fireplace with it.

You'll soon find that your brooms are very popular. Handcrafted, they will be much sturdier and more attractive than the machine made brooms found in craft shops.

But not only will your brooms be in demand, so will the corn or "sweeps"! So far they are difficult to secure for the prospective broom maker. Plant lots of broom corn, because any extra you might have will be in great demand once folks see your brooms.

(Seed source: Gurney Seed Co., Yankton, S.D. 57078)

Lorraine Kiefer writes a weekly garden column for the *Franklin Township Sentinel*. A lifelong member of 4-H garden clubs, she has been a 4-H leader for the past 10 years. Kiefer has been a member of PHS for many years and entered the 1977 Harvest Show. She raises many house plants in a 10 x 15 ft. greenhouse at home, has a large vegetable garden with the family, and together with her husband, Ted, propagates cuttings of shrubs in mist beds for their "part-time" nursery.

●

Ferns for Rock Gardens

by F. Gordon Foster

Today's ideal rock garden is a composite of small, rock-loving plants, all arranged in simulated natural settings to provide a beautiful and unusual area. Far from being a new concept, rock gardens originated shortly after the creation of the earth. Hardly had the waters receded when two tiny plants, alga and fungus, joined in symbiotic relationship, which has remained viable for millions of years. Flowerless and leafless, the water-thin lichens selected the naked rocks to restablish the first known rock garden.

Ferns later evolved from lower forms of plant life to become one of the first vascular plants. Today, they are a great family of about 12,000 species, making their homes from the tropics to the near polar regions. Many small to medium-sized rock-loving species readily adapt themselves to rock garden settings. Although with a historical background of so many millions of years, ferns have had little or no serious application in rock gardens. In fact, some writers have listed all kinds of saxatile plants but have entirely overlooked the ferns.

photos by F. Gordon Foster

Spinulose shield-fern, *Dryopteris spinulosa,* used as a "transitional" at the end of a rock garden.

If your rock garden does not have ferns, consider some of these unusual non-flowering plants. In contrast with many short-lived flowering plants, ferns retain their foliar beauty throughout the season and the evergreen species continue to be attractive until overtaken by new leaves the following spring.

Here are some species that will make a startling display in an all-fern rock garden or will provide a subtle foliar background for your alpines.

No rock garden would be complete without at least one stone covered with the evergreen rock-cap fern, *Polypodium virginianum.* This little fern has a wide range of habitat and is fully hardy in colder areas. It prefers the quickly drained surfaces of rocks, whether it be hard quartz conglomerate or soft limestone. Leaves growing from intertwining rhizomes give the plant a dense mat-like appearance. Leaf mold and decaying pine needles seem sufficient to supply its growing nutrients.

Asplenium trichomanes, maidenhair spleenwort, is just one of many spleenworts that grow around the world. This species, while growing in favorable areas throughout the United States, also grows in the British Isles and Europe where it is often seen growing from limestone mortar of old walls and foundations of cathedrals and chateaus. Actually only a handful in size, it definitely deserves a place in the rock garden. When propagating it, be guided by its natural growing conditions—limestone and old mortar.

Ebony spleenwort, *Asplenium platyneuron,* is one of the perkiest of all small ferns and in some respects appears like a miniature Christmas fern, although there is no generic relationship. It is an excellent choice where a "vertical" can be used. It is often found on limestone ridges, shale banks, and common woodland soil. Try growing it in front of a light-colored stone; a mixture of coarse gravel or marble chips and humus is a recommended growing medium.

a favorite

Hart's-tongue fern, *Phyllitis scolopendrium,* has always been among my favorite rock garden ferns. Although the American species with its long, tongue-like leaves is nearly extinct, the English hart's tongue fern and its handsome mutations are now listed in many nursery catalogs. The imported varieties have wavy, irregular leaves and in some mutations carry crested apical terminals. In England these are common in gardens large and small, and are often found growing out of limestone walls. A most thrilling fern experience for me was seeing these unusual ferns growing from the spray-dampened wall at the base of the monument of the "Lion of Lucerne" in Switzerland. If possible, grow this species from an eroded pocket in a chunk of weathered limestone. Hart's-tongue ferns are hardy but where the winters are severe the plants should be protected. Be alert for night-prowling slugs—they can be devastating.

Japanese painted-fern, *Athyrium goeringianum,* has soft, grey-green leaves with wine-red veins and midribs. Leaves of some varieties may reach 24 in.; I prefer the dwarf type that does not exceed 10 or 12 in. All members of the *Athyrium* genus have creeping rhizomes and are prone to spread. Spreading of this species, however, is relatively slow, requiring separating about every three or four years. Plant it around a low grey-colored stone to display its colorful leaves to their best advantage.

Gymnocarpium dryopteris, the oak fern, is a small fern, usually 4 to 6 in. tall, resembling a miniature bracken in appearance and wandering habit. In nature it is often seen in the shelter of a huge rock and, although growing from a creeping rhizome, it never wanders from the site of the original planting. It will do best when planted next to a large, attractive rock in an open-light area in a moist, well-mulched soil, free of weeds.

a rare fern

Rusty woodsia, *Woodsia ilvensis,* is somewhat rare but is now available through large growers. Ordinarily "little rusty" is found growing high in exposed

continued

and almost inaccessible places. I have found it along the upper cliffs of the Delaware River, high on Pilot Knob overlooking Lake George, and on Mt. Dumpling, Alaska, at an exposed elevation of 2400 ft. Blunt-lobed leaves range between 3-6 in. and are light grey-green on the upper surface. Brown hairs and scales on the underside give this area a rusty appearance. Plant it in a deeply eroded natural niche or build up a pocket with two or three stones to which a circumneutral growing medium is added. Do not overwater, but guard against a prolonged dry spell.

Our native bladder-ferns are widely different in size and leaf structure and, with reasonable care through dry weather, grow readily in the rock garden. The two more common species are the bulblet bladder-fern, *Cystopteris bulbifera,* and the fragile bladder-fern, *C. fragilis.*

The name "fragile" is misleading as this little fern, ordinarily not exceeding 10 in., is one of our most rugged species. It is the first fern to appear in the spring, and is often overtaken by a late winter snowfall. Plant several of these so they may peek out from between the stones of a border. This fern disappears during very dry weather, quickly returning after a refreshing shower or two.

Bulblet bladder-fern has long, pendulous leaves; I have measured some in my garden 5 in. wide at the base and 42 in. long. In addition to reproducing sexually by its spores it also reproduces asexually by little pea-like bulbils on the underside of the leaf. These drop to the ground and start new sporophytes during the same season. While a native of damp limestone walls and outcroppings, this species will tolerate ordinary garden soil. As a suggestion, add chopped oyster shells or bits of old concrete to the soil; both give a slow alkaline release and improve drainage.

Japanese painted-fern, *Athyrium goeringianum*

Ebony spleenwort, *Asplenium platyneuron,* growing on native limestone boulder in Carlisle, Pa.

Rock-loving ferns, identified with botanical names, growing in author's garden which has become known as a "living reference library." From left to right (with signs): 1. *Woodsia ilvensis,* 2. *Asplenium platyneuron,* 3. *Woodsia obtusa,* 4. *Cheilathes lanosa,* 5. *Athyrium georingianum,* 6. *Pellaea atropurpurea,* 7. *Thelypteris noveburacensis.*

Phyllitis scolopendrium

Pellaea atropurpurea, purple cliff-brake, normally is found growing from tight crevices of outcropping of limestone. It has unfernlike leaves of soft, grey-green texture sometimes growing as high as 18 in.; garden specimens rarely exceed 10 in. In keeping with all brakes, the outer edges of the leaflets are reflexed, partially covering the spore cases beneath. In milder areas this fern is evergreen.

Our native walking fern, *Camptosorus rhizophyllus,* is an unusual fern with its "walking" habit and is also one of the most difficult to grow. Evergreen leaves are simple, long tapering, 4 to 12 in. long. In nature it limits its habitat to the vertical faces of limestone cliffs where good drainage is assured. In nature it grows in limited sunshine or all-day open light and shuns full shade. Snails and slugs are a perpetual nuisance. Walking ferns reproduce in two ways—sexually through their spores, and asexually by vegetative growth from their apical tips. The latter is far more common in nature and may be seen in garden-grown plants.

an easy fern

Polystichum is a genus having world-wide distribution. Some species have leaves that are 1-pinnate, others have leaves 2- or 3-pinnate; all have in common prickly endings of their ultimate leaf segments. In England this group is referred to as prickly shield-ferns; in America they are known as holly ferns. All of them are attractive and easy to grow. A moist, well-drained stony leaf mold or compost is the suggested growing medium.

Christmas fern, *P. acrostichoides,* is fully evergreen and can be grown as a bold clump. It is first seen in the spring as a group of silvery-white croziers arising from last year's prostrate green leaves.

Braun's holly-fern, *P. brauni,* (deciduous) and the mountain holly-fern, *P. lonchitis,* are very rare and should only be obtained from nurseries specializing in spore-grown plants. Both plants grow in cooler areas and must be kept as cool and moist as possible during hot weather. Protect each species with sufficient mulching to prevent spring heaving.

I am particularly fond of an English species, *P. setiferum,* also known as a hedge fern. In addition to having the usual holly-like characteristics of the others, it also bears little ferns on the upper side of the leaf near the base. These live-bearing leaves may be cut and pinned to a damp growing medium to obtain more plants. Growing them under fluorescent lights makes a good winter horticultural project.

At present, my all-fern rock garden is in Sparta, N.J., a rocky, hilly area overlooking Lake Mohawk in the northwest corner of the State. Here the elevation is 1100 feet and winter temperatures occasionally drop to -20° F. To say that my rock garden is carefree would be misleading—like all gardens it requires weeding, watering, and mulching. I have found, however, that my efforts are well rewarded as each day I follow the growth of these fascinating plants.

Suggested Reading

Rock Gardens, Booklet No. 10, Brooklyn Botanic Garden.

●

F. Gordon Foster, author of *Ferns to Know and Grow* (Hawthorn Books, Inc., 1975) is a nationally known lecturer and writer on native and exotic ferns. He is honorary curator of ferns, Brooklyn Botanic Garden; honorary fern horticulturist, New York Botanical Garden; and honorary member of the American Fern Society.

The Wealth of Bonsai Books: A Survey

by Dorothy S. Young

The press run of bonsai books may exceed the number of bonsai plants in America. During the past 20 years more than 50 books in English have been published on bonsai.* Forty of them are still in print. These range from beautifully illustrated editions to the practical how-to-do-it at every level of interest—beginner, expert, or onlooker. This survey can help you find books to match your reading interest. All of the books are in the PHS library.

Many photographic albums are printed as catalogs of the major bonsai shows in Japan each year, and for the enthusiast these are instructive. They are usually in color and are ongoing documentaries of Japanese bonsai. The most handsome and eagerly sought is the hardback album of the annual Bonsai Exhibit of the Japan Bonsai Society held during February in Tokyo's Ueno Park. The edition for the 1977 show, Number 51, contains more than 200 color plates of the finest bonsai of Japan. It sells for approximately $30.00 in America, which may seem high. One bonsai devotee, however, figured that amounted to 15¢ a photograph and declared it a bargain.

Only one series of albums about American bonsai has been published. Since 1967, the Bonsai Society of California has published *Bonsai in California,* an album of photographs of bonsai with its annual spring exhibit in Los Angeles. The attractive soft-cover book, approximately 50 pages, printed in Japan, provides a valuable record of California bonsai.

In addition to show catalogs, the Japanese publish special or commemorative bonsai albums that often become collector's items. Some of these large-format editions are among the most beautifully printed books in the world. *Bonsai Masterpieces,* published by the Japan Bonsai Society in 1970, is the best general book on bonsai among the coffee-table albums. It contains more than 300 large (12 in. by 10 in.) color plates of specimen bonsai beautifully, and sensitively, photographed during the four seasons of the year. It also has a supplementary English translation by Yuji Yoshimura.

Both the show catalogs and the large albums reveal, over a period of time, the continuing evolution of bonsai in Japan. It is a mistake to think of bonsai as "fixed" even at the peak of perfection. Each living, individual bonsai changes as it grows, and Japanese concepts and styles also change. As an example, compare the photograph and sketch of the windswept juniper bonsai, an ancient *Juniperus chinensis sargenti,* approximately 250 years old. The color photograph was taken in Washington, D.C., where the juniper is now among the Japanese bonsai collection given to the United States during our Bicentennial. The bonsai form as it appeared 12 or 14 years ago is pictured in the sketch of a photograph from *Gems of Bonsai and Suiseki* commemorating the 1964 Olympics in Tokyo. At that time, the tree had soft, rounded contours and dense foliage that extended low on the trunk. Today, the foliage is thinner, a larger portion of the trunk is exposed, and the bonsai has a pronounced triangular, instead of rounded, shape. It is the same but not the identical bonsai; changes made during a fraction of its life have altered it dramatically.

In contrast to the many Japanese and American books on bonsai, there is only one book in English on bonsai in China, the land where bonsai originated.

out of the mainstream

Sometimes, an album appears that is out of the mainstream of bonsai and can be enjoyed simply for itself. *Bonsai Miniatures Quick and Easy* is a fascinating mini-album of small bonsai under six inches. The tiny spiral-bound book, published in 1973, is only four by six inches on heavy stock paper. On one side of each page is an enchanting color photograph of Zeko Nakamura's bonsai, none more than six inches tall. On the back of each page is a running text in English. The author, who was a Zen Buddhist acolyte as a child, is a famous actor and master of pantomine in Japan. The little bonsai are delightful. Nearly every photograph has active lines — the bonsai seem to speak for themselves and invite readers to grow miniature bonsai of their own.

As popular interest in bonsai developed during the 1950s, American hobbyists and would-be hobbyists sought information on bonsai from Japan. The first bonsai book in English appeared in 1957. The publisher, Charles E. Tuttle Company of Rutland, Vermont and Tokyo, made a wise choice. *The Japanese Art of Miniature Trees,* by Yuji Yoshimura and Giovanni M. Halford, is outstanding and comprehensive. The authors delineate bonsai styles, describe basic techniques, and provide appendixes with information not readily found elsewhere: a listing of over 300 bonsai trees and shrubs by their botanical name, recommended styles, growing conditions, and cultural requirements. The book remains the best published work on traditional, classical bonsai. Happily, it is still in print.

Bonsai-Saikei, by Toshio Kawamoto and Joseph Y. Kurihara, is the best self-teacher for bonsai and saikei (miniature landscapes of trees and rocks). The large book (361 pages), published in 1963, is innovative in both format and content. Hundreds of drawings illustrate bonsai design and step-by-step techniques for pruning, wiring, potting, and training bonsai and saikei. Kawamoto developed saikei as an inexpen-

*Bonsai is the art of dwarfing and shaping trees and shrubs in shallow pots by pruning, controlled fertilization, etc. (Webster's *New World Dictionary,* Second College Ed., World, N.Y., 1970).

photos furnished by author

Juniperus chinensis var. Sargenti

sive form of bonsai, made with young seedlings and ordinary rocks, that could be enjoyed immediately. Although not accepted by the bonsai establishment in Japan, saikei has become popular here and in Japan. *Bonsai-Saikei,* now out of print, is replaced by Kawamoto's fine abridged *Saikei: Living Landscapes in Miniature.* These two authors, Kawamoto and Yoshimura, are contemporaries with similar backgrounds. Each received early training in his father's bonsai nursery, attended horticulture college, and became a professional bonsai master. Each wrote his book with a co-author fluent in English. And here the resemblance ends. Yoshimura is the traditionalist, devoted to excellence; Kawamoto is the maverick, dedicated to bringing bonsai within the reach of all. Together, their books present two different approaches to bonsai art.

Many other bonsai books have been written by eminent Japanese masters. Despite a certain amount of repetition and several minor discrepancies (particularly concerning definitions of style), each one has merit, and all are worth reading. I especially enjoy *Bonsai, Miniature Potted Trees* (1964) by Kyuzo Murata. Through the book, the reader can visit Murata in his bonsai nursery and experience the personality of the man who preserved bonsai during the Second World War and is now the foremost bonsai master in the world.

american books

Although Americans warmly welcomed Japanese bonsai books, they found that the instructions and methods were not entirely applicable to American conditions. With determination and common-sense, American bonsai growers learned how to modify Japanese techniques and find substitute materials. Of the dozen or so books that followed by American authors, the most helpful ones are by professional horticulturists.

The first book containing bonsai information, written by an American, was *The Art of Training Plants* (1962) by PHS president, Ernesta D. Ballard, who learned bonsai from Yoshimura after he came to America. Her book replaces the Oriental mystique surrounding bonsai with practical horticultural methods. It has become a classic and remains today the best primer for bonsai as well as the growing of other decorative container-grown plants.

Lynn Perry, like Ballard, a graduate of horticulture college, studied with Murata for three years when she was working in Japan during the late 1950s. In *Bonsai Trees and Shrubs,* written on her return to the United States, she describes Murata's methods and gives cultural and training information for 50 trees suitable for bonsai.

Bonsai Techniques (1973), by John Naka, is the most comprehensive bonsai book by an American. The West Coast author, formerly a landscape gardener, is now nationally known as a professional bonsai grower and teacher. His book contains numerous drawings of precise techniques and mathematical ratios for bonsai. It is an invaluable learning/reference bonsai encylopedia.

William N. Valavanis, a young American with two degrees in horticulture and three or four years of bonsai apprenticeship in Japan, has written two technical books: a definitive 68-page volume, *Japanese Five-Needle Pine* (1976) and *Bonsai Creation and Design Using Propagation Techniques* (1975). These are the first American books on advanced Japanese bonsai techniques.

Until recently, there has been no American book depicting the sequential development of bonsai over a period of 10 or more years. In 1977, Yuji Yoshimura published the 64-page *Commemorative Album Marking 25 Years*

continued

photo by Z. Nakamura

Mame bonsai of Zeko Nakamura

photo by Wu Yee-sun

Podocarpus macrophyllus

of Bonsai Instruction, illustrating with photographs the gradual development of 40 trees into specimen bonsai. Yoshimura is now a U.S. resident and head of the Yoshimura School of Bonsai in Briarcliff Manor, New York.

In contrast to the many Japanese and American books on bonsai, there is only one book in English on bonsai in China, the land where bonsai originated. *Man Lung Garden Artistic Pot Plants,* by Wu Yee-sun, was published in 1969 by Wing Lung Bank Ltd., Hong Kong. With hundreds of stunning photographs of his own bonsai (called "artistic pot plants" in China) and an accompanying text in English and Chinese, Wu, banker and expert amateur bonsai grower, describes the history, development and styles of Chinese bonsai. The first edition is out of print. A second, revised edition was published as *Man Lung Artistic Pot Plants* in 1974. The fascinating book opens the door to a new world of bonsai.

●

Dorothy S. Young is a member of PHS Council and chair of the Library Committee. She was one of the founders, the editor, and president of the American Bonsai Society. She now heads Dorothy S. Young Associates, specialists in horticultural services, workshops, conference planning, public relations, and audio/visual programs.

Bonsai books mentioned in article and available at PHS library

The Art of Training Plants, E. Ballard

Bonsai Creation and Design Using Propagation Techniques, W. Valavanis

Bonsai in California, California Bonsai Society, annual album

(Bonsai Masterpieces) General View of Japanese Bonsai with an English Supplement by Y. Yoshimura

Bonsai, Miniature Potted Trees, Kyuzo Murata

Bonsai Miniatures Quick and Easy, Z. Nakamura

Bonsai Saikei, T. Kawamoto and J. Kurihara

Bonsai Techniques, J. Naka

Bonsai Trees and Shrubs, L. Perry

Commemorative Album Marking 25 Years of Bonsai Instruction Y. Yoshimura and G. Halford

Gems of Bonsai and Suiseki, Commemorating the 1964 Olympics, Japan Bonsai Society

(The Japanese Art of) Miniature Trees, Y. Yoshimura and G. Halford

Japanese Five-Needle Pine, W. Valavanis

Kokufu Bonsai Exhibit, Tokyo (Catalogs of Annual Exhibit)

Man Lung Artistic Pot Plants, Yee-sun Wu

Man Lung Garden Artistic Pot Plants, Yee-sun Wu

Saikei: Living Landscapes in Miniature, T. Kawamoto and J. Kurihara

arachis hypogaea

My aunt gave me a handful of peanuts that she brought back from the Carter farm while on vacation to Americus, Georgia, ten miles from Plains. For the fun of it, I shelled them and planted them in early June.

I used the 10-6-4 organic base fertilizer, mixed it well in the soil and made a short row. I planted the peanuts and pulled soil up into a hill. About 21 days later the peanut began to come up as a light green plant. Cultivation consists in controlling weeds, scraping soil loose and watering when necessary.

In July the plant began to bloom putting out beautiful small yellow flowers. As I watched them grow, I noticed in the evening the plant would spread out flat on the soil and pods would bend downward and enter the soil. I would help nature a little by placing the soil heavily around the plant

These peanuts are something special to my relatives and friends. I think we will have them around a long time.

We dug the peanuts up in November and laid them out to dry. I used some of them for holiday nuts. The rest will be used for seed in my next garden.

Hazel Felton

●

Hazel Felton is a community gardener out at the 56th & Haverford Demonstration Garden co-sponsored by the Penn State Urban Gardening Program and Haddington Leadership Organization. Her article on sugar cane appeared in the March issue.

photo by Wanda Rochelle Larrier

Author harvests peanuts.

lonicera sempervirens

One of our most beautiful native vines is *Lonicera sempervirens.* Found wild in woods and thickets from Connecticut to Florida and Texas, it should not be confused with *Lonicera japonica,* its invasive relative from Japan. It was first introduced into Europe in 1656 where it was cultivated by John Tradescant. In this country is was grown by such gentlemen gardeners as George Washington and Thomas Jefferson in the eighteenth century.

Nicknamed trumpet honeysuckle and coral honeysuckle, it has conspicuous terminal spikes of six-flowered whorls of 2-in. long orange-scarlet flowers. The inside of each tube is yellow. The time of bloom is part of this vine's unique appeal. The flowers start opening in May with the full flush coming in June. But the plant is rarely without flowers until the first frost. Unlike the usual honeysuckle, these flowers are unscented.

The fruits are small red berries, but fruiting is very scant. I've never seen more than one or two berries on a plant.

Just below the flowers the upper one or two pairs of leaves are united to form an oblong disk. Below these the opposite pairs of leaves are sessile with very short petioles. The color of the leaves is bluish-green, but new growth has a slight purplish cast. In this area the plant is deciduous, though farther south it retains its leaves all winter.

Lonicera sempervirens can climb as high as 20 ft. and is often written of as robust and fast growing. But I think these qualities much depend on where it is grown. My plant came from a friend who wanted to get rid of it in a bed beside her house because it was "taking over." I planted it at the base of a sassafras tree *(Sassafras albidum)* in a semi-wild area of my garden, hoping it would clothe the trunk. Under these conditions it's doing well, but at a very slow pace. In three years it has not made even a tentative attempt to ascend the tree. Also, I have twice seen it in competition with a lawn, and though the plants looked good, they were far from robust.

This vine's only real problem is its susceptibility to aphid attack. I have seen some plants where they are not a problem, but mine are beset regularly every spring as the flower buds are swelling. Spraying the plant easily eliminates this pest.

It is fairly easily raised from cuttings of half-ripened wood in summer.

Maureen Pratt

●

photo by Maureen Pratt

Maureen Pratt is on the staff of the Arboretum of the Barnes Foundation. She also gardens at her home growing as much as possible from seed or cuttings.

continued

polyscias fruticosa

My first exposure to polyscias came more than two years ago, when, after having moved into our new executive offices in Philadelphia, I was scouting the local nurseries looking for plants that would survive in our offices.

The polyscias (ming aralia) that you see was the result of my foray, and it is thriving beautifully in a west window exposure without any direct sunlight. It is cornered on the south side of the office against the west window wall, which is draperied with an open-weave material. It is watered once a week and fed a liquid fertilizer once every two months.

This is the second location for the tree plant. It was originally placed against the same west window on the north wall of the office and received late afternoon sun. Its growth pattern was the same, and its location was changed only because of its additional decorative effect in its new setting.

I am very pleased with the polyscias; I find it to be an ideal office plant with low maintenance requirements. It apparently is pest and disease free, and yet it fills very adequately and beautifully with a graceful line what was an empty corner, lending itself well to the oriental accent of my private office. Further, it is an interesting plant, slow growing, yet sending out new leaves while shedding old, always renewing its foliage.

This is one of three polyscias that I own. The other two, acquired later, are at home at southern exposed windows, with only early morning angled sunlight, and they receive the same amount of care as the office plant.

Having experimented at home, I know that the polyscias does not accept direct midday sun; the full sun burns the dainty tracery leaf structure.

Charles J. Kenkelen

●

Charles J. Kenkelen is chairman of the board and president of a national company, who finds plant care and working in the garden at home an easy way to relax from the problems of the day. The garden is primarily ornamental evergreens and bushes, with perennials and a recently begun flower garden. Polyscias, geraniums, poinsettias, and assorted house plants occupy some of Kenkelen's time during the winter.

photo by Edmund B. Gilchrist, Jr.

hedera helix

The rooted cutting of the adult form of *Hedera helix* (English ivy) that I planted in a container for the terrace has surprised me by blooming each fall. These blooms are followed by umbels of dark blue berries that last into spring. These were bonuses I had not expected as I had selected the particular plant for its tree-like form and because I thought it went well with the container. I've been pleased with it not only as a container plant outside but as a house plant during the winter. It certainly is a minimum care plant.

I planted it in a mixture of half garden soil and half Pro Mix, but any good garden soil would do as well. On the terrace it gets full sun the first half of the summer and half sun the latter part of the summer. About July I give it a top dressing of time release fertilizer.

Although *Hedera helix* is winter hardy in this area, I bring mine indoors late in the fall, as I use it for greenery on the hearth in my living room. There it receives only indirect light most of the winter. I do pull it out into the sunlight on the floor occasionally. A little water now and then and that's it for care.

Although the plant in the picture looks scraggly because the blooms are borne on long peduncles, it is neat-looking after these are trimmed back and stays that way with very little pruning. It doesn't seem to be the fast grower that the juvenile form is.

The juvenile form of all species of ivy (Hedera) climbs by means of aerial rootlets, has lobed leaves and is sterile. This is the familiar form of ivy.

The adult form branches from the juvenile form as it ages, has no aerial rootlets (therefore doesn't climb), has narrow unlobed leaves and is fertile. Shrub-like plants (as in the picture) can be grown from cuttings from the adult branches.

Martha Roberts

●

photo by Edmund B. Gilchrist, Jr.

Martha Roberts is an alumna of the Barnes Foundation. She likes both indoor and outdoor gardening, with a special feeling for flowering shrubs. She is a member of the Exhibits Committee and has been a generous and active PHS volunteer.

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Monarda fistulosa (wild bergamot).
See story on page 15.

THE green scene

HORTICULTURE IN THE DELAWARE VALLEY
JULY • AUGUST • 1978 1.50

Fixing Flowers

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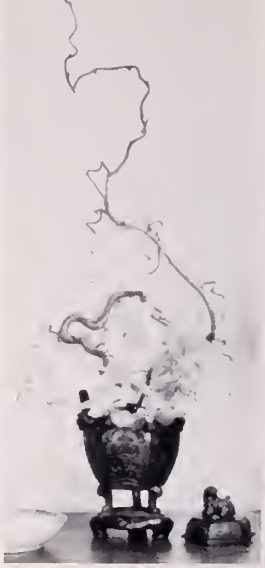

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THE green scene

HORTICULTURE IN THE DELAWARE VALLEY

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in this issue:

Front Cover: Dried flowers: pearly everlasting *(Anaphalis margaritacea),* seed pods of daffodil garlic *(Allium tuberosum)* and bright gold of yarrow *(Achillea filipendulina).* photo by George Reed

Back Cover: Yarrow in late June *(Achillea filipendulina).* photo by Edmund B. Gilchrist, Jr.

CORRECTION:
The captions for *Saxifraga* X *andrewsi* and *S. biternata* on page 22 of the May issue were inadvertantly reversed.

Why Flower Arranging?

by Julia S. Berrall

It has always seemed wonderful to me that there is such a thing as the plant world, ready at our fingertips to promote happiness, serenity, healing of the spirit and healing of the body. Here is something akin to music, for it is universally appreciated. Primitive people, civilized people, adults and children all respond instinctively to floral beauty. And flowers promote sharing. Take a child for a country walk, he spies a bit of color, picks a flower then gives it to you — a very natural gesture. A rose fancier brings some cherished blooms indoors for you to place in a vase. You are now a "flower fixer." But as soon as you begin to realize that cut flowers look best in a container of the right size and color, and if they harmonize with their room setting, you are becoming a "flower arranger."

Cut flowers, no matter how beautiful in themselves, remain just a bunch of flowers unless they are displayed according to the time honored working principles of design: balance, proportion, harmony or contrast, rhythm and dominance. These are painters' terms, but they apply to all visual art. Contemporary designs emphasize some of these to the exclusion of others, but balance is psychologically necessary, and modern designers seem to emphasize contrast more than any of the other basic principles.

Students of flower arranging have always searched for rules, but few have been available other than the classic 18th century Japanese rules, which dealt for the most part with balance and proportion. Certain conventions of placement, and certain combinations were too restrictive for us, but we could admire the knowing simplicity of the Japanese Ikenobo designs. The Chinese, when they displayed just a few pieces of plant material in a vase, such as a pine branch and the stem of a developing chrysanthemum, were teaching symbolism and the serenity of contemplation.

Europeans with a more flamboyant sense of decoration, and with an abundance of garden flowers have always enjoyed full bouquets since the days of ancient Egypt and Rome. Except during the Medieval period of religious fervor there has been little attempt to use flowers symbolically. All through history the visual arts have revealed the then known flowers of each civilization. Europe first received the oriental flowers from Asia Minor by caravan and ship. Then the great navigator-explorers of the 15th and 18th centuries enriched gardens by introducing plants from the New World, the South Pacific and the Far-East. With a great wealth of flowers at their fingertips it was no wonder that during the Reformation of the Church, which had been their principal patron, Northern European painters turned their talents to assembling glorious bouquets and still-lifes. Today's flower arrangers can always find inspiration in these canvases for color harmonies, textural contrasts, rhythmic line, third dimension and composition within a restricted space.

A completely genuine flower arranger grows at least some of the plant material with which he or she designs.

Post World War II days have brought a startling change. A world in turmoil has been reflected in all art. The Japanese revolt against the past restrictions of their classic flower art has had enormous influence, as have the varied expressions of artists who have dealt in abstractions and assemblages, many with shock value. Much contemporary flower art is dynamic and clever, but some is downright ugly. The svelte design of just a few flowers and leaves can be beautiful and dramatically simple, but when we combine plastics and junkyard metal with a paucity of plant material, don't we miss the exhilaration of working in a unique medium that is a transient, living one?

Any true artist is master of his medium. Aside from the technical skills, he is so thoroughly acquainted with his chosen mode of expression that he has respect for all of its innate possibilities. Therefore, a completely genuine flower arranger grows at least some of the plant material with which he or she designs. What better way is there to study the individual characteristics of our flowers, appreciate their variety of form and subtleties of color, judge their keeping qualities, and learn their design potentialities? Growing your own can discourage the tortured look of manipulation, and encourage the grace of natural line.

To the physical and mental stimulation that comes from gardening can be added the enjoyment of having cut flowers always available for our rooms, and we can grow flowers especially for show purposes. Best of all is the supreme satisfaction of creating a beautiful outdoor scene. Within the flower garden we deal in colors and textures, both of which can be translated into floral compositions. When exhibiting at flower shows we sometimes notice combinations of foliage and flowers we have never thought of using, and often we are introduced to unfamiliar plant material that we can try in our own gardens. The garden can inspire us to try new combinations to design with, and show arrangements can suggest new varieties to grow.

We can reap rich rewards from flower arranging; we can:

- Delve more deeply into horticulture and gardening.
- Learn the origins of plants, their travels, and old-time uses.
- Aquaint ourselves with the basic art principles of design.
- Decorate the rooms within our homes more beautifully, and display historically correct flowers in period rooms.
- Enjoy the competition of the Flower Show.
- Experience the joy of creativity and self-expression.

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Julia S. Berrall is author of four books: *The Garden, An Illustrated History* (Viking Press, 1966); *A History of Flower Arrangement* (Viking Press, new edition 1968); *Flowers in Glass* (Studio Publications, 1954); *Flowers and Table Settings* (Studio Publications, 1957). She also authored a seven-page article on floral decoration in the latest edition (1973) of the *Encyclopaedia Britanica.*

Growing Flowers for Fixing:

A GARDEN IN GLEN MILLS

by Marise F. van Trump

photos by Marise F. van Trump

Peony X *Smouthi*

As long as I can remember, I've loved fixing flowers. While plant material from the florist is a joy, nothing compares with the thrill of things you have grown yourself or found in the nearby fields. Gradually our garden has developed to provide plant material for all seasons. The specific varieties of daffodils, roses, chrysanthemums and others have been chosen for such personal reasons as the size of my dining room table or the colors in my living room, so they are not included. Surely many more plants could be added, given additional time, space and energy, but these provide something for me to fix indoors any time in the year.

Summer

Fortunately, as hot weather arrives, we can enjoy the bulbs, annuals and perennials we planted earlier. To have some special flowers for the first of summer, we plant our ismenes *(Hymenocallis calathina)* during the first week of June, being careful not to cover more than the bulb itself. The large fragrant white blooms are impressive and the buds will continue to develop indoors.

Lilies are aristocrats of the season. The Mid-Century hybrids and the Regals lend themselves especially well to indoor use. Since I don't want to cut long stems or use too many of the blooms, I usually combine them with other foliage, pieces of weathered wood or the dried stems from last year's lilies, which I had cut when the garden was cleaned up. Allium grows well during the summer, regardless of the weather. The ball-shaped blooms have a long life when cut and can be dried.

When the flower stalks of the hardy amaryllis *(Lycoris squamigera)* appear miraculously in mid-summer, they almost beg to be taken indoors and combined with a little foliage to enhance their fragile pinkish lavender beauty.

Often color, with its powers of suggestion, determines what we want to pick. For a cool arrangement there is

Hibiscus — Southern Belle

the steely blue of the globe thistle *(Echinops ritro)* with its downy green foliage. When strong colors are more desirable, the summer garden offers spikes of tritoma *(Kniphofia sp.)* as well as the orange butterfly weed *(Asclepias tuberosa),* coreopsis *(C. verticillata)* and gaillardia.

When there are only a few roses, the terminal clusters of the butterfly bush *(Buddleia davidi)* and some curly leaves of Scotch kale from the vegetable garden can be added for an elegant table arrangement.

The giant 8-in. blossoms of the Southern Belle hybrid hibiscus last only a day, but they live without water and can be put with rocks, wood, ferns or strong foliage for a spot of color.

Seed pod clusters from the golden rain tree *(Koelreuteria paniculata),* picked soon after they form, make a distinctive arrangement and will also dry for use later.

Summer is the season of annuals with zinnias, marigolds, petunias, bells of Ireland, celosia, calendulas and more waiting to be picked. Since each will be used many times, interest and pleasure come from fixing them with different materials. Deep green foliage from the aucuba, or the Burford holly, hosta leaves, grey artemesia or sage *(Salvia officinalis),* blue-green juniper, white pine or some of the branches of fantail willow *(Salix sachalinensis* 'Sekka'), which have been stripped of most of their leaves — all are fun to use. Then, too, the fields abound with dainty Queen Anne's lace *(Daucus carota)* and one variety after another of goldenrod *(Solidago spp.)* which can be used alone or combined with garden flowers.

Autumn

If a killing frost is late, we may continue to enjoy our annuals and superior roses through much of the fall, but this is really the season for berries, chrysanthemums, foliage and fruit.

Even though the berries are still green, September is the time to pick bittersweet *(Celastrus scandens).* Indoors they will open in a few days and the coverings will stay attached much longer. It is wise to pick our native bayberry *(Myrica caroliniensis)* at the same time; by November the birds will have eaten all those berries. Many viburnums have beautiful berries. As those of the tea viburnum *(V. setigerum)* start to ripen, they are a soft orange color, which is especially pleasing in the early fall.

Soon the fruits of the hardy orange *(Poncirus trifoliata)* turn yellow, a strong contrast with the spiky green branches. If the fruit falls off indoors, it may easily be impaled on the heavy thorns to be enjoyed a bit longer. The fruit has such a pleasing fragrance that I like some in a bowl, perhaps with the large, rough green fruit of the osage orange *(Maclura pomifera)* that grows in the hedgerows.

Starting in September there are two perennials that are particularly lovely if you can find a spot in the garden where they do well. The tall racemes of monkshood *(Aconitum autumnale)* are a deep blue and sometimes mistaken for delphinium, which I can't grow. Nearby is the windflower *(Anemone japonica),* which is especially graceful when used indoors.

Once the regular chrysanthemums start to bloom, I marvel anew at their long-lasting beauty. There is such variety in the types and colors, and they can be combined with so many things — grasses from the fields and swamps, fertile fronds from the ostrich fern *(Matteucla nodulosa),* foliage of peonies, evergreens, brown dock or late goldenrod. As Thanksgiving approaches, there are usually a few left to combine with fruits or vegetables as an accent.

Autumn is the time when dried materials have great appeal. Even if you haven't dried things earlier, many naturally dried materials are pleasing such as the large leaves of the magnolia *(M. macrophylla),* wild teasel, even the old blossoms of the hydrangeas. Although we have fewer things to use in the autumn and winter seasons, all of them last longer.

Winter

As we spend more time indoors, we appreciate those things from the garden that can be enjoyed in the house. Having your own green for Christmas is the height of luxury. Among the needled

continued

evergreens, spruce, pine and fir are traditional. Douglas fir *(Pseudotsuga taxifolia)* is especially easy to use. However, I have found that juniper, arborvitae *(Thuja occidentalis)* and chamaecyparis, while not as choice, are much longer lasting, so I use them early and as background materials.

All the hollies are beautiful — *Ilex opaca, I. cornuta* and *I. aquifolium* especially — and seem to benefit from being pruned at Christmas. The bright red berries of our native deciduous holly *(I. verticillata)* last well and combine easily with other green for a holiday arrangement.

After all the greens of the holiday season, bare branches are appealing. The warm brown of the winged euonymus *(E. alata),* the gnarled black of the Italian prune plum *(Prunus domestica)* or the fasciated curves of the fantail willow (see photo of Sarah Groome's arrangement, page 30) make arrangements by themselves, a setting for a favorite figurine, or a background for some special daffodils or tulips from the florist.

Nothing suggests that spring is coming better than the pussy willow *(Salix discolor).* With gentle pressure their brown "overcoats" may be pushed aside and their stems bent to pleasing curves. There is an early variety that I have not been able to identify. It is more shrub-like in its growth and earlier to open its larger catkins.

For foliage, even in the coldest weather the shiny green leaves of the aucuba, which grows in a protected area, or the rosettes of the ground cover pachysandra will perk up when brought indoors. *Mahonia aquifolium,* which has some sun, provides beautiful swirls of deep red foliage. For a strong modern effect a few pieces from an old *Mahonia beali* are perfect; the stems have a most distinctive pattern, the leaves last well, and the chartreuse blossoms that follow eventually are fragrant. For a quite different effect, the graceful leaves and tassels of buds of the *Pieris japonica* are quite pleasing.

For forcing, my favorites are the winter hazel *(Corylopsis spicata)* whose greenish yellow catkins are followed by dainty pleated leaves, the star magnolia *(M. stellata)* with its furry grey-green buds and fragrant white blossoms, and my mother's old flowering quince *(Chaenomeles lagenaria)* whose easily forced flowers suggest the later apple blossoms. All of these have such distinctive branches that they form a pleasing picture while you wait for the blooms. After cutting them, I soak the branches for several hours in the bathtub, then split the stems and arrange them.

During the season the witch hazels *(Hamamelis mollis* and *H. vernalis)* along with the winter jasmine *(J. nudiflorum)* will flower outdoors. As with the small bulbs that follow such as winter aconite *(Eranthis hyemalis),* it is a joy to bring in a few and boast about your blooming garden.

Spring

Here is the season most eagerly awaited. Though these blooms do not last as long as those we have forced, there are so many trees, shrubs, bulbs and perennials in flower that others are soon ready to be cut.

Daffodils dominate the early season. If winter is slow to leave, some of their fat buds can be forced indoors. If you don't have trouble with rodents, tulips will soon be starting their show. However, since bulbs need most of their leaves to produce healthy flowers next year, other materials should be used with them. I've found the feathery evergreen Sawara cypress *(Chamaecyparis pisifera* 'Plumosa'), judiciously pruned white pine *(Pinus strobus),* our native spice bush *(Benzoin aestivale)* or flowering branches from the weedy sassafras tree *(S. variifolium)* are fine. Weathered wood enhances them as do some of the bare branches left from winter arrangements.

The specific varieties of daffodils, roses, chrysanthemums and others have been chosen for such personal reasons as the size of my dining room table or the colors in my living room.

Most flowering trees and shrubs will last longer if they are picked in the bud stage. All magnolias are magnificent indoors; a single branch may be enough. Some of the fragrant viburnum *(V. carlesi),* brought indoors, gives you a chance to appreciate its dainty flower clusters with the grey-green leaves in addition to its lovely scent.

In early May our peony time begins with my favorite, the early hybrid *Paeonia* x *Smouthi,* which has rich red single blooms and distinctive fine-cut foliage that is beautiful and useful until fall. Next will come the spectacular tree peonies, then the regular herbaceous ones. For indoors the single and anemone types are easiest to use.

Over the years I've collected a number of lilacs ranging in color from white to deep purple. Recently we added some of the later flowering pink Persian ones. Fortunately all of these profit from being cut with long stems as a step in pruning. The flowers will last well, if you take off most of the foliage, crush the lower stems and put them in deep water.

Azaleas, too, are generous with their bloom and come in so many colors. Indoors they thrive as well in elaborate mass arrangements as they do with rocks or wood for a naturalistic effect.

Most iris fanciers specialize in the large bearded varieties. However, for arranging indoors, I prefer the dainty white roof iris *(I. tectorum),* then the taller Siberians with their slender foliage, and next the spectacular spurias. By mid-June I am always grateful to find the Louisiana iris with its distinctive form and strong colors.

The large-flowered hybrid clematis provides a wealth of long-lasting flowers with interesting buds and stems. The seed heads, which form quite soon, are fascinating golden green pompoms that enhance other flowers, especially in a brass container.

When the roses begin to bloom, I try to fix the cut blooms with some longer lasting material such as hosta leaves, meadow grasses, branches of bayberry foliage, glossy privet *(Ligustrum lucidum),* or even the immature curly dock *(Rumex acetosella),* which is green with rosy tints. Then I can add fresh roses each day in a short time.

After so many flowers, a change is sometimes good for conversation. A simple and good change is the developing branches of the staghorn sumac *(Rhus typhina),* which is not poisonous and abounds in the hedgerows. My favorite is the Egyptian top onion, which produces curved thick stems with the tiny onions at the top, each with fascinating sprouts. Fortunately both of these are long lasting, ready to carry you into summer and another year.

•

Marise F. van Trump is a member of the Society's Council and has been active as its headquarters exhibit chair and in the Harvest Show. She is an accredited flower show judge who has lectured and taught flower arranging for many years.

Growing Flowers for Fixing:

A GARDEN IN MALVERN

by Joanna Reed

I'm not an arranger. Each year the niche classes are, to me, a Roman feast. I feast my eyes with wonder and admiration in my heart. The conception and execution of the entries are exciting compositions of vibrantly fresh plant material. Never do the mechanics show, but they must be there. Flowers and foliage don't emerge from stone or metal nor do they float endlessly before the perfect color background without assistance. Bravo for the arrangers who bring pleasure and inspiration to thousands annually at flower shows large and small.

I am a fixer. I love to have flowers or bits of plant life in my home at all times, often just pieces that have been pruned or thinned from an overgrown plant plus a flower or two. Sometimes a bunch gathered while on a walk through the garden, woods or along the roadside. The bunch could be mammoth or miniscule, a collection of many things, or entirely one species at its peak of perfection.

I remember as a child, my grandmother's lovely habit of "bringing a little of the garden indoors," also I remember a beloved cook who would fix the smallest bunch of florist flowers so that six or seven rooms had a hint of both fragrance and color. Her trick was to add snippets of foliage, automatically contrasting color, texture and size. Only occasionally would she feel compelled to snip a branch or two from a neighbor's property. At such times she would firmly state "that bush needs shaping" or "just wait and see how that bush will thicken up now." How right she was and how much pleasure I owe to both of these women.

I have two methods of fixing flowers, if you can call them that. First: I pick flowers, foliage, grasses and seed pods as they catch my eye. With this method I have a bouquet in my hand ready for vase or jar. Second: I often start with interesting pieces of foliage, in a vase or jar, then add flowers, branches of fruiting or flowering shrubs, buds, seed pods, sedges or whatever; *voila.* My containers have been acquired in much the same manner as I gather my bouquets. A few are handsome, purchased as treasures or received as cherished gifts. Others, perhaps a bit chipped (easily disguised with plant material) but otherwise pleasing in shape and color, were purchased at some white elephant sale or found on the roadside along with bittersweet and sumac.

Summer

In the summer I love to include sprigs of mints for their lovely cool fragrance. *Mentha spicata* (spearmint), *M. piperita* (peppermint) and *M. citrata* (orange mint) are all crisp and intensely green. *Mentha suaveolens* (formerly *rotundifolia),* apple mint, round furry and slightly grey and its cultivar *M. suaveolens* 'Variegata,' pineapple mint, with almost pure white leaves toward the top of the sprigs, are nice contrasts. Ginger mint, with variegated dark and acid green foliage, makes a striking plant, great for cutting; although not found in *Hortus III,* it can be found in many gardens. The silvery greys of the artemesias, the bold leaves of bergenia and

continued

Joanna Reed's lovely "fixings" have appeared on the tables at many PHS events. She is a member of the Philadelphia Unit of the Herb Society of America and has worked on their exhibits at both the Harvest Show and the spring show.

◀
Cutting garden in the fall. Marigolds and zinnias in variety along with scarlet sage are interplanted among earlier vegetables. The rhubarb, chard and kale are cut as much to accompany flowers in a bouquet as to be eaten.

hosta, the purple leaves of *Perilla frutescens* and *Ocimum purpureum* (purple basil) and the furry foliage of *Nigella damascena* add an extra dimension.

Autumn

In fall the reds of *Vaccinium corymbosum* (blueberry), *Viburnum acerifolium* (maple leaf viburnum) and *Viburnum prunifolium* (black haw), and the yellows of *Clethra alnifolia* (sweet pepper bush) and *Hamamelis virginiana* (witch hazel) hold well when cut as do the evergreen and evergrey shrubby herbs.

Perhaps mixer should be substituted for fixer, whether flowers are combined in a riot of shouting colors or wispy grains, weeds and unripe seeds all green or tan, my bouquets for home or friend are rarely planned, they just happen.

Winter

I like to use foliage in winter to enhance a scarce bloom: leucothoe, buxus, pieris, *Prunus laurocerasus,* sarcococca, *Viburnum rhytidophyllum,* stranvaesia, pachysandra, *Hedera helix,* skimmia and *Ilex glabra.* Also *Juniperus virginiana, Juniperus chinensis* 'Torulosa,' cryptomeria, thuja, *Pinus strobus* and *Pinus virginiana.* I would love to use *Sciadopitys verticillata,* the most elegant of evergreens; however, having unfortunately procrastinated over the perfect spot to plant such a prize specimen, I have none to cut or to behold.

After the reds and greens of the Christmas season, try combining *Chamaecyparis lawsoniana* 'Aurea' with sprigs of *Salvia officinalis* (golden sage) and the velvety golden winter buds of *Paulownia tomentosa.* Tuck in a few bright yellow dried yarrow *(Achillea filipendulina)* for an accent. Freshly cut woolly white foliage of horehound *(Marrubium vulgare)* makes a nice foil for bright blue dried statice and white baby's breath. *Gypsophila paniculata,* also dried, in a pewter bowl. For fragrance try branches of *Viburnum fragrans, Chimonanthus praecox* or *Jasminum nudiflorum* (all readily forced) with densely dark green *Taxus cuspidata* 'Nana.' The bronzy green of *Cryptomeria japonica* and the waxy winter purple of leucothoe are perfect with the bright red fruit of *Ilex verticillata* (winterberry), *Rosa rugosa* or *R. multiflora.* If the occasion is special add a few "boughten" carnations. The Christmas rose *(Helleborus niger)* has such sturdy longlasting foliage and blossoms it needs no embellishment. It would be needless for me to suggest that anyone force branches of forsythia, fruit trees, flowering crabs and ornamental cherries; without them who could survive winter?

Spring

By March, thankfully, bulbs will appear; use a hummock of moss from the woods (nature's environmental oasis) to hold a few blossoms of *Eranthis hyemalis* (winter aconite) in a terra cotta saucer. *Galanthus nivalis* (snow drops), *Crocus tomasinianus, Scilla siberica* and chionodoxa can be further enhanced with a few snippets of *Thymus vulgaris, T. citriodorus, Satureja montana* (winter savory) or the santolinas, either green or grey. *Tulipa praestans* Fusilier, so far immune to moles and voles, is a brilliant red as well as a prolific bloomer. Narcissus Tete-a Tete, February Gold, April and Trevithian, *N. campernelles, N. gigantheus* are good yellows, mostly fragrant. *N. thalia,* Geranium, Mount Hood, White Lion and Actaea are my favorite whites. All the narcissus are good alone in generous bunches or combined with any of the foliage mentioned earlier.

Phlox divaricata, Arabis alpina, Cheiranthus cheiri (wall flower), *Primula polyantha* and *P. japonica* start the long succession of flowers that are yours for the picking until November. Combinations are endless. Don't forget that fields and roadsides are treasure troves as well as your cutting garden or perennial border at all times of the year.

continued

My bouquets for home or friend are rarely planned, they just happen.

photos by George Reed

A Joanna Reed arrangement: flower at lower left is *Coreopsis verticillata;* to the right is bee balm or Oswego tea *(Monarda didyma),* a favorite tea plant for Indians and colonists alike. It's now a reliable attraction for hummingbirds.

MALVERN continued

A list of my favorite old reliables are:

Spring to Summer:		
May, June – second bloom if cut back sharply	**Achillea taygetea*	yarrow, yellow
May, June	**Allium schoenoprasum*	chives, pink
May, June	*Salvia pratensis*	meadow clary, blue
May to July	*Anthemis tinctoria*	golden marguerite
Late May to July – second bloom if cut back sharply	**Achillea filipendulina*	yarrow, yellow
May to late August	*Hemerocallis spp.*	all varieties, yellow, pink and red
Late spring, early summer	*Dianthus spp.*	all and any variety
Summer:		
All summer – second bloom if cut back sharply	**Achillea ptarmica*	yarrow, white
Blooms June, foliage good all summer	**Alchemilla vulgaris*	lady's mantle
All summer	*Begonia evansiana*	bright pink
All summer even after frosts	*Calendula spp.*	yellow and orange
All summer if kept cut	**Echinops spp.*	globe thistle, steely blue
All summer if kept cut	*Gaillardia spp.*	blanket flower, all varieties, yellow and red
Mid to late summer	Marigolds	in profusion
Summer	**Rudbeckia spp.*	cornflower, yellow and pink
All summer	*Zinnia spp.*	all colors
June	*Allium moly*	lily leek, yellow
June if cut back most of the summer	*Salvia superba*	purple
June, July	*Coreopsis verticillata*	bright yellow
June, July	**Lavandula angustifolia*	purple
June to August	*Asclepias tuberosa*	butterfly weed, orange
June, July, August	*Heliopsis scabra*	dark yellow
July	*Allium sphaerocephalum*	round headed garlic, red
July	**Monarda didyma*	bee balm, bright red
July until frost	**Salvia farinacea*	mealy cup, blue
Late July to October	*Ceratostigma spp.*	plum baginoides, leadwort (deep blue)
August	**Allium tuberosum*	daffodil garlic, white
August, September	*Salvia rutilans*	pineapple sage, red
August, September	**Sedum spectabile*	pink
August, September	**Sedum spectabile* 'Atropurpureum'	bronzy red
August, September, October	**Solidago spp.*	especially the very yellow sempervirens
August to October	*Anemone japonica*	white, pink
August to November	*Chrysanthemum spp.*	all colors
Fall:		
September until frost	*Salvia involucrata*	rosebud sage, rosy, pink
September until frost	**Salvia leucantha*	Mexican bush-sage, purple
September, October	*Aconitum spp.*	purple
October	*Aster tataricus*	lavender

*Also for winter use; simply hand and air dry.

Growing Flowers for Fixing:

A GARDEN IN THE CITY

by Elizabeth G. Henny

Dr. and Mrs. Henny began their gardening life in Portland, Oregon. When they were married they built their house on Portland Heights and expected to spend the rest of their lives in a garden looking at Mt. Rainier and Mt. Hood. Four years later they made a "temporary" move to Philadelphia for Dr. Henny's medical residency. Some 20 years later, after redoing gardens on various rented places, they dropped the "temporary" clause when they bought their present property. Twenty-one years of work on this garden have made it feel permanent.

The choice of material to be used in containers in our house is dictated mainly by what is available in the garden. Because we can step directly from the living room into the garden, we tend to think of our house as an extension of the garden and enjoy the relationship year-round. The answer to much of our indoor needs from the garden is simple: we prune. We enjoy having a tall arrangement in the far corner of the living room so it catches the eye when one approaches the wide doors that lead down the three steps from the entry hall. For this we want branches at least 6 ft. high for the background in our slender old Russian copper-and-brass pitcher. In a small study adjacent to the entry hall, we use tall branches in the large pottery pitcher that sits atop an old Franklin stove. Ferns grow beneath a concealed fluorescent lamp on top of the stove also.

Although our acre-plus overlooks the Wissahickon woods we do need screen planting. So we have used many plants of a single variety, such as *Cornus florida* (50 of them), a dozen *Cornus kousa,* a solid hedge of white *Azalea mucronatum.* Everything we have planted has been chosen to be harmonious with any room in the house. Therefore after pruning, the branches and stems are brought in as cutting material. Probably our best investment for both outside and inside is the *Magnolia grandiflora,* semi-espaliered against the south wall between the large windows of the living room and those of the dining room. The espalier must be kept under control; so we cut long branches whenever we need them, and have the advantage of the large white flowers.

January

Following our garden-house symbiosis around the calendar, January finds us still enjoying our Christmas season decorations. Our 200 ft. English boxwood hedge, 125 years old, needs severe pruning, which we do in late November. A large boxwood wreath trimmed with exotic dried material graces our front door sometimes until mid-February. We can't bear to take it down for storage. Boxwood trimmings keep remarkably well both indoors and out.

On a mild day in January we cut armloads of forsythia for forcing to make a welcome change in the tall containers. Also, having ordered 100 paper-white narcissus bulbs in November, we have at least three bowls at a time in successive fragrant bloom throughout the winter. We do not have good facilities for forcing other bulbs so content ourselves with these.

February and March

During February and March we are on much the same schedule, depending on forsythia and paper-whites. Our forsythia bushes are relegated to the upper edges of the vegetable garden so we do cut more generously than if we had to consider landscape effect. In early March usually we can cut from our choice *Daphne odora* for forcing. This deliciously fragrant, difficult shrub, so easily grown in the Seattle area, has been entirely hardy on the southeast lee of a 2 ft. stone wall until last winter

continued

We enjoy using bare gingko branches in the big Pennsylvania Dutch pitcher in the study, hung with small red birds and many red satin apples, all vivid above the Franklin stove.

when nearly a third of it died back. It is a Zone 7 plant, does not take kindly to moving, but against a wall at the top of a slight southeast downslope it is well worth the risk. Also we cut our *Sarcococca humilis* not only for its lustrous small dark green leaves, useful with the short daphne stems, but also by themselves for the inconspicuous tiny white flowers that suddenly perfume the air on a mid-March morning. This treasure is a perfect ground cover, about 15 in. high, along the entire front of the house, which has a northern exposure. Sarcococca needs good north light and no direct sun. We cut it year-round for supplementary greens in large or small bowls.

March and April

Late March and early April give us a good spring preview in the house. Our flowering quince, *Chaenomeles japonica,* is just the right color for the rooms and at least every other year we can cut it quite lavishly. By mid-April we cut long branches of *Malus hupehensis,* the delicate pink-and-white tea-flowering crabapple. Six of these graceful trees bound the south side of our cherished allée, a former greenhouse, which is on an axis from my husband's upstairs study window and from my "piano window" just below. Fortunately it requires heavy pruning to function properly. Also we have 10 *Azalea schlippenbachi,* which we prune for the house even though they are short-lived in containers. *Viburnum carlesi* gives us small fragrant nosegays, a reminder of the earlier *Daphne odora.* Our many naturalized narcissus give us cutting material into late spring.

May

Then at last comes May and we have choices galore. A hedge of white *Azalea mucronatum* backed by white dogwood was inspired by a visit to Winterthur years ago. It really must be pruned severely to prevent blocking the view, so all containers burgeon. We love cutting long branches of white dogwood for the tall copper pitcher in the living room as well as for the study, often combining them with the white azalea. We do not hesitate to prune them, again to keep vistas open, contrary to accepted practice, and they have suffered no damage. Among the screen plantings we have interspersed *Viburnum tomentosum,* which provides flat white flowers and dark green leaves on long sprays, striking against our light walls. We eagerly await the lilacs, filling large bowls for tables, always stripping the leaves from the stalks with the blossoms, supplementing with separate stems of foliage. The leaves consume so much water that the blossoms wilt quickly if they must compete. Now we can cut philadelphus, all of these shrubs being consigned to the cutting garden, as their decorative value is too short for the main garden. Peonies are ready for the big blue-and-white Wedgewood bowl on the living room table, these too from the cutting garden. We plant only the singles, preferring the creamy whites with the elegant gold stamens.

June

Early June provides us with some of our gems. From our *cornus kousa* we can salvage long branches of the four-petalled white stars for the corner containers. They need sparse line arrangements and often last three weeks in the house, almost our favorite material. The Exbury azaleas yield enough clippings for small bowls. The *Magnolia grandiflora* is now contributing enough short-stemmed beauties to keep the flat Chinese bowl on the dining table handsome until late August or even September. One blossom is rewarding, three are truly extravagant. Also in June we luxuriate in our Tropicana roses, the only kind we grow. We gather three dozen or more for the big Wedgewood bowl. We find it most effective to have an abundance of one thing.

July and August

In July and August we have snapdragons and zinnias from the cutting garden as well as less splashy arrays of Tropicana roses. Another source of delight is *Hydrangea quercifolia,* its lacy spikes of bloom effective in large bowls, with our essential *Skimmia japonica* adding the needed dark green foliage. These last for weeks and are decorative even after they turn dry. We never use the hydrangea foliage.

September, October and November

We continue to depend on zinnias and snapdragons in September and October until frost. But the important floral show is the supply of chrysanthemums, giving us both tall and short material. Now we are using branches of *Osmanthus armatus* and *O. ilicifolius,* elegant foliage enhanced by the fragrance of the inconspicuous flowers. We also snip *Elaeagnus pungens* 'Fruitlandi' for its autumn fragrance. This versatile shrub we grow as a vine over the dining room doors opening onto the terrace.

The main standby for the tall containers in October and November are great branches of pyracantha, cut from a good screen planting. *P. coccinea* 'Lalandei,' the run-of-the-mill variety, does make a fairly handsome display in the tall copper containers and lasts for weeks. But our favorites are the good red-berried varieties that brighten the old 12-ft. stone wall, the north abutment of the crabapple allée. These true Christmas reds we hoard until December and then really raid them.

December

Our screen planting of *Ilex aquifolium,* good old English holly, gives us plenty of proper Christmas greenery, but is usually skimpy with the red berries so we fake with red pyracantha. The crisp *Osmanthus ilicifolius* assures us charming slender branches of Christmas background in the tall corners, setting off our supply of honest-to-goodness holly berries from our daughter in Seattle.

We really go all out at Christmas time, decorating windowsills, bookshelves and tables with short branches of *Ilex aquipernyi* as well as the osmanthus, which silhouettes so seasonably against windows or walls, and always English box in every empty spot. We

Dogwood

enjoy using bare gingko branches in the big Pennsylvania Dutch pitcher in the study, hung with small red birds and many red satin apples, all vivid above the Franklin stove and against the light walls. We always make our own Christmas tree in a nice hand-thrown jar, boxwood clippings stuck into a foil-wrapped brick of oasis, festooned with the tiniest clear lights and small gilt birds and bells. *Leucothoe catesbaei* is another staple that fills in many a gap throughout the winter. We count on *Stranvaesia undulata,* trained against the south wall of the house, opposite the magnolia, for its coral berries to give more winter color in small, spare arrangements.

And so we come back to January, always finding more interesting uses for the garden material that extends itself willy-nilly right into the house.

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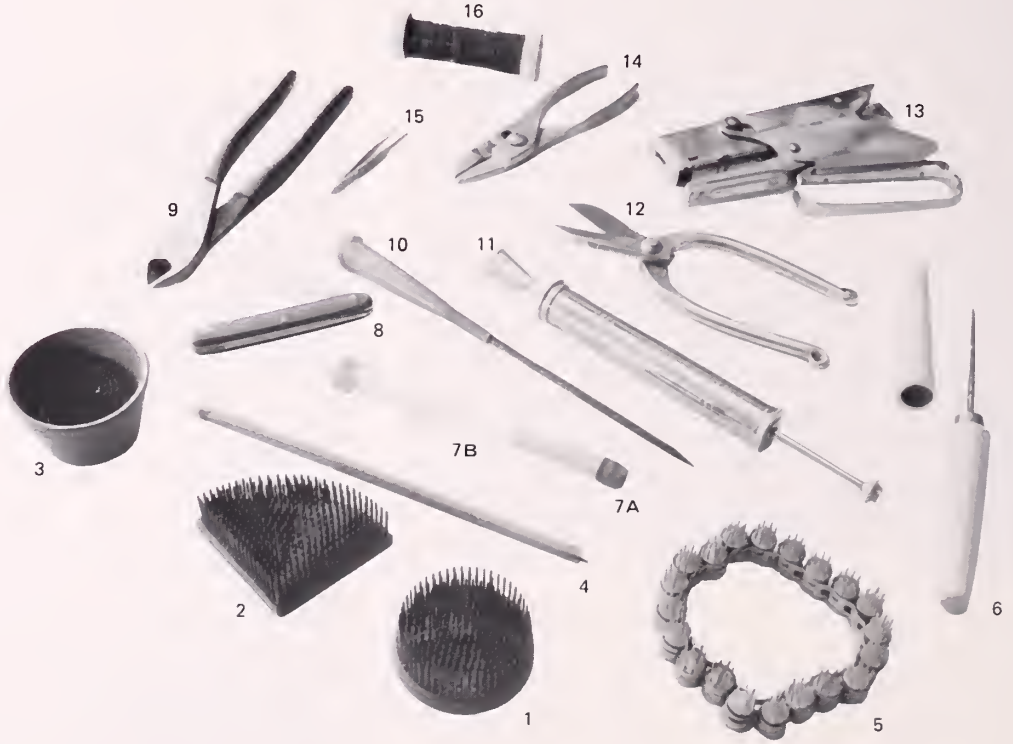
Lilies from the garden

photos supplied by author

From Picking to Fixing:

THE CONDITIONING AND MECHANICS OF



1. Round needlepoint holder
2. Ginko (pie) shaped needlepoint holder for containers with corners
3. Aqua cup needlepoint holder that holds water
4. Long plastic tube stuffed with cotton for orchids or other short-stemmed flowers – a form of water pick
5. Snake needlepoint holder – can be taken apart for free form containers
6. Ice pick with sheath

7a. Small plastic water pick
7b. Clear glass water pick

8. Florist's knife
9. Wire cutters
10. Plastic water pick on hyacinth stake to raise flower height
11. Special pump for forcing water into flowers and foliage
12. Japanese flower arranging shears
13. Stapler for foliage
14. Pliers
15. Tweezers
16. Spool wire

photos by George Makin

Making flower cut under water

FIXING FLOWERS :

by Bernice R. Makin

Today we have flowers that are larger, more fragrant, longer lasting, and to some, more beautiful. Whether gathering these flowers from the garden or buying them from the florist, the idea is to have them live as long as possible and in the best condition. This goal can be achieved by "hardening" or "conditioning" (the two terms are used interchangeably) the flowers before using them in the arrangement. The process is necessary to bring the flowers from their natural environment (outdoors in sun and rain) into the artificial environment of a home, then to a bowl or container of water cut off from their normal source of nutriment. Flowers from the florist will already be conditioned but the flowers from the garden will have to be conditioned before use.

starting in the garden

When cutting from the garden always take a container of water with you to put the flowers into as you cut them. Cut your flowers as early in the day as possible. Use a sharp knife or pair of scissors; make slanted cuts. Cut flowers in different stages of development so that they will not all die at the same time.

After you come into the house with your flowers, recut them all under water in a bowl or bucket (especially when preparing for a flower show). To facilitate your work when you are arranging, sort the kinds and colors and put them in separate clean containers of warm (105°F) water to which you've added a floral preservative. The commercial flower preservatives are formulated with a bacteria deterrent and a water sweetener and can add almost a week longer to arrangements. Warm water is conducted through the cells faster and the flower becomes turgid more quickly than when using cold water. Harder stemmed flowers can take warmer water. Woody stemmed flowers and branches sometimes take water more slowly than their softer stemmed relatives. In order to allow the water to flow rapidly into woody stems, consequently to blooms, pound or crush the bottom inch of the stem with a hammer. Also mist these flowers and branches. Leave the containers of flowers in a cool place, free of drafts, for a couple of hours, or overnight. Some flowers fare better in a very little water, while others require water up to their necks. The requirements must be learned from experience.

I used the next largest water holding container; I removed the toilet tank top and plunged the mums into the water up to their blooms.

While the material (flowers, leaves, grasses, etc.) is conditioning select the container you wish to use and assemble your oasis or pinholder, clay, clippers (or knife, if you can learn to use one) but never kitchen or household scissors. They pinch, instead of cutting. Keep your tools clean because dirty tools spread disease; periodically soak tools in soapy water and Clorox. It will help to check the spread of infection. Most tools are of a non-rusting alloy so using them in water will not harm them. Needlepoint holders can be cleaned in the dishwasher.

If you must condition flowers in a hurry to make an arrangement for unexpected guests, here's how: Treat them as you would normally — gathering, sorting and placing in containers of warm (105°F) water. Wait until the water has cooled to room temperature then submerge the entire stem, leaves and all, into ice water, allowing to stand for about a half an hour. Normally they will crisp up so that you can use them quickly after cutting.

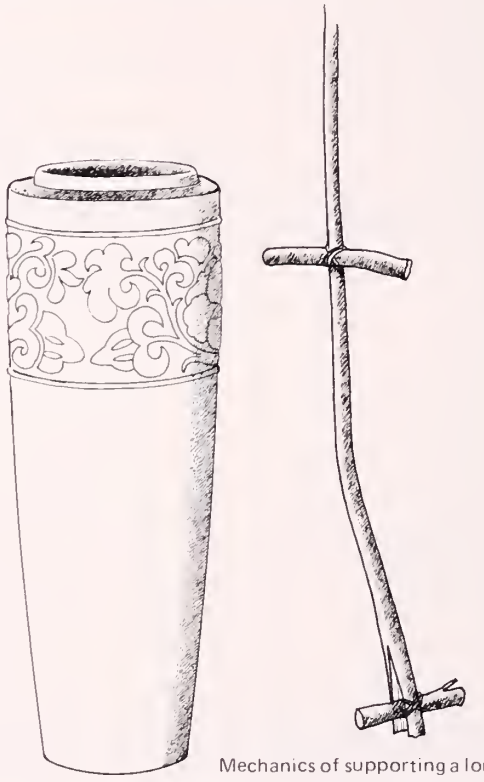
techniques in conditioning plant material

There are many ways to condition flowers. Following are several techniques that I have used successfully.

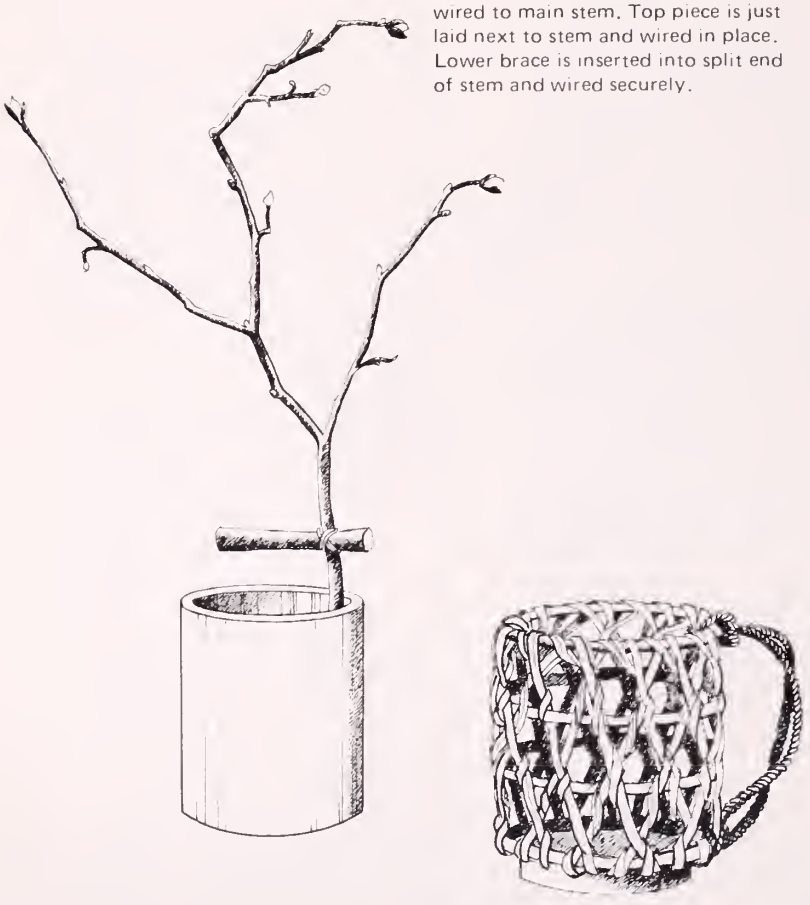
Suggested Procedures

1. Cutting stems under water.
2. Boiling water method.

continued



Mechanics of supporting a long branch in a tall vase. Use two pieces of branch wired to main stem. Top piece is just laid next to stem and wired in place. Lower brace is inserted into split end of stem and wired securely.



Bamboo insert for basket. Wood brace for branch.

Burning method of conditioning flowers

3. Burning method.
4. Scraping, mashing or splitting stem ends.

Here are examples of the appropriate procedures to use with different flowers:

Canna Lily: Cut the stem under water in a bowl. If they start to droop, put the bottom 2 in. of the stem in boiling water for 10 minutes. Avoid wetting the blossoms by wrapping the remainder of the stem in newspaper.

Euphorbia Family: Milkweed and poinsettia exude a milky white substance once the stem is cut. The oozing must be stopped before the flower can take up the water. Hold one inch of the stem in the hottest part of a candle flame until it glows red. The tip of the stem is turned to charcoal and readily absorbs moisture, making it available to the rest of the branch. While it still burns thrust the end of the branch into cold water and proceed with conditioning. Tree peonies, poppies and dahlias require this type of conditioning.

Chrysanthemums: Cut the stem under water in a bowl. If they start to droop, split or crush the lower 3 in. of the stem. For severely wilting flowers break stem with fingers and use the boiling water method then stand them in a container of deep cool water overnight.

Colored oasis and pinholders

Bernice R. Makin's interest in gardening has led her through many phases of horticulture. She believes firmly that people who grow flowers are the better arrangers. She currently has teaching degrees in two different schools of oriental flower arranging and is a master flower show judge.

"Normal" people do not travel 300, 400, 800 miles with flowers to exhibit in a flower show. I was taking chrysanthemums to a show out of state, with the mums carefully packed in tissue paper in a large 2 ft. by 5 ft. box. Arriving for the show I found that the mums had suffered from intense heat build-up in the box and wilted badly. The motel did not have a tub, so I used the next largest water holding container; I removed the toilet tank top and plunged the mums into the water up to their blooms. They had completely recovered by morning and won prizes in the show.

Flowers that Require Special Care

Bulb flowers are fragile flowers, usually rapid growth type; consequently, they are full of a great deal of water. They should not be placed in deep containers. They do better standing in shallow water. However, be careful to maintain that water level.

Tropical foliage, such as ti leaves, baker fern, dracena, croton, and most ferns grow in an atmosphere of heavy moisture and absorb a large proportion of water through their leaf surface rather than through their stems. If they must be stored for a time, place foliage and container inside a plastic bag. Place the bag in the refrigerator and occasionally air it out to prevent rot from setting in. I have kept baker fern for as long as four weeks by this method.

Calla Lily: Cut stem in water. Rub stem ends with salt, let stand a few minutes, then recut in fresh water in a bowl.

Calla Lily Foliage: Pump water into leaves with special water pump. (See illustration.)

Pampas Grass: Place cut ends in a mixture of one part vinegar to four parts water, let stand one hour, then recut (under water) and allow to stand in cool water overnight.

Fern: Cut in water or use boiling water method.

Clematis: Pinch the lower inch of the stem with your fingers and allow to stand in either oil of peppermint or sake (rice wine) for three minutes. I prefer the sake because it calms the arranger as well as ensuring lovely blooms.

Wisteria (in bloom): Split the stem ends and peel back the bottom inch of bark. Crush the end and let stand in alcohol or sake for half an hour. Use the burning method for large branches or for foliage.

Evergreens: Needled and broad leaf evergreens. Split stem ends and stand in deep warm water overnight. Mist lightly from above.

Maple branch with leaves: Split stem ends or use the burning method. Spray backs of leaves with water or front of leaves with sugar water, 3 teaspoons of sugar to a quart of water.

Lilacs: Split stem ends and rub them with salt, or use the burning method.

Roses: Cut in water in a bowl, crush the stem ends, or use the boiling water or burning method. After that they are ready for a deep soak, up to the bloom (leaves also) in warm water. Commercial rose growers now advise that if roses wilt, submerge them (stem, leaves, flower) in deep warm (105°F) water and place flowers and container in a cool place. They will soon revive. Leave the roses in the deep water for four to six hours. The roses can then be returned to the arrangement.

Most ordinary plant material will "self-condition" when just cut and placed in warm water. I have attempted to illustrate the methods used to condition the more interesting and unusual types of plant material. I hope these suggestions will be useful to anyone who wants to prolong the freshness of materials used in flower arranging or horticultural exhibits.

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Fixing Flowers in the Home:

CONTEMPORARY ARRANGING AT HOME

by Barbara J. Cramer

photos by Roger D. Demos

Carved wooden birds on slate base with Harry Lauder's walking stick and iris.

What are the rules for a contemporary arrangement? Actually, very few aside from those fundamentals of design that regardless of time or trend do not change: balance, contrast, proportion, scale, rhythm, dominance. Contemporary arrangements are usually bold in form, line and color. Many authorities feel rhythm is the most important principle in contemporary design.

Even though we are no longer governed by rigid rules and methods there is a direct relationship between the past and present. Today we simply use old ideas and methods in new and different ways, and they are a springboard for contemporary arranging. For example, I set a traditional mass arrangement on a concocted modern container made from an odd shaped vase turned upside down. On top of the vase I set a glass custard cup that holds a pin holder, water and oasis. This is a good way to elevate an arrangement that is all too often simply anchored to the ground. See Fig. 1.

You have much freedom and many alternatives when selecting a container for a contemporary arrangement. Give some thought to the relationship of the container to the plant material, and where it is being used in the home. It need not be fine porcelain. Many rough thrown pots are most distinctive and adaptable to any home setting. Much of today's pottery has exciting textures and wonderful earth tones. Gourds are excellent for displaying horticultural specimens. A gourd container with a favorite daffodil or tulip can always be found in our library during the spring bulb season. It is a perfect example of a new way to use something that has been around for years. The Indian used the gourd to hold liquid. It is still being used to hold

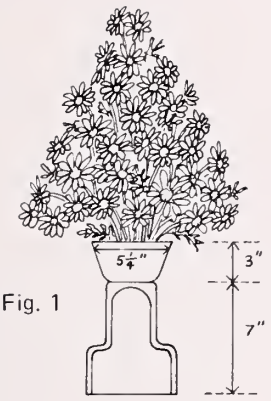

Fig. 1

liquid, but in a new and different way.

The traditional bud vase can be replaced by displaying plant material in the wide variety of green or brown wine bottles. These can be used separately or in a grouping. When using more than one bottle, it's not necessary to fill each one with plant material since unoccupied space is often more forceful than occupied space. Innovative homemade containers are another possibility for the contemporary arranger. Paint a simple tuna can a neutral color and insert a needlepoint holder. A piece of slate or an irregularly cut slab of wood with a needlepoint cup pin holder all painted the same color makes a good basic container for many contemporary line designs. If an accessory contributes to the design and is in proper scale, use it. Usually a contemporary accessory is bold in form and less detailed than one used in a traditional arrangement.

Plastic is a creative medium for the contemporary arranger when used with restraint and in good taste. Plastic remnants can be obtained at plastic centers and can be heated and bent into marvelous free forms for use as containers or accessories. Thick square and rectangular blocks can be intermixed to make an attractive table decoration when combined with a few flowers. Plant material needing water can be placed in a plain glass cup with a needlepoint holder secured with stickum. The needlepoint can be concealed by placing small irregular chunks of glass around it. These can be made by heating clear or colored pieces of glass in a hot oven, plunging them into a container of ice water, wrapping them in a towel and hitting them with a hammer. When there are no flowers available white pine combined with these

continued

Above left
Driftwood finished with shoe polish. The driftwood is impaled on a round metal curtain rod that has been imbedded in a homemade painted hydrocal container. Rhododendron foliage has been added.

Above
Dried gourd painted black and elevated on metal rod and set on wooden block. Flowers are open tulips.

Left
A wagon wheel hub holds honeysuckle vine, fishtail palm and yellow football mums.

CONTEMPORARY ARRANGING continued

containers and used with candles produces a dramatic effect. Colored plastic rods also can be heated, shaped and used as rhythmic line material.

Calcareous tufa rock, known as feather rock, makes a perfect container for the porch or patio. It is easy to chisel out a space for a needlepoint cup holder. Like most contemporary containers it can be used with a variety of plant materials as they are seasonally available. Several roses placed in the tufa rock is a good way of emphasizing dissimilar qualities of each.

Plant Material

The choices of plant material for a contemporary arrangement cover a wide range. Greenhouse flowers and foliage such as anthuriums, birds of paradise and callas all fulfill the requirements of bold form and, in the case of the first two, bold color. These are not, however, the only selections open to the contemporary arranger. Keep in mind such plant material as ferns or jack-in-the-pulpit from the wild garden. Don't overlook the fields with their free gifts of goldenrod, thistles, Queen Anne's lace or milkweed pods. The bold forms of the peony and rhododendron are quite distinctive. The summer garden gives us the marigold, zinnia and dahlia. The chrysanthemum is a delightful complement to most designs, and the many varieties of houseplant foliage should not be forgotten. Just remember, almost any plant material can be adapted to this type of arrangement. Even when the size of a flower is small many can be bunched together to create a larger form.

Line is a powerful force in contemporary arranging. It is often the structure, rhythm and silhouette of the design. Many depend on line as the most important element in their design. Line material is plentiful and everyone must decide which they prefer: honeysuckle, willows, wisteria, sansevieria, russian olive, yucca, grasses, cattails and Harry Lauder's walking stick, to mention only a few.

Honeysuckle can be found in most woods and is easily twisted into a desired shape. It can be peeled down to a delightful yellow-green color and then shaped and left to dry. Willow (tortured, fantail or the common variety) is a line material used frequently. In the early spring it can be looped and baked in the oven. When finished it is difficult to convince people you have not painted it with shellac. Combining these loops, half loops or twists with several flowers or leaves (often only two) creates an exciting visual motion. Leaves of sansevieria can be shaped, taped and left overnight to form flowing rhythmic curves. Yucca can be bent to produce a dramatic angular design.

Many windows are an ideal place for a hanging arrangement. My favorite hanging arrangement is made in a wrought-iron cathedral shaped plant holder. A branch of tortured filbert is used along with two daffodils or two of any other flower.

Daffodils, tulips and iris are available at farmer's markets starting in January. How uplifting to hang these spring flowers in a window through which is seen a heavy blanket of snow.

Driftwood is one of the most versatile of nature's gifts. Twisted roots taken from the woods often need cleaning with a wire brush while driftwood from the ocean's beaches or lake shores has already been cleaned. The environment of mountain tops or barren regions has sculpted masterpieces of weathered wood. Once found, the wood can be left alone or rubbed with shoe polish, bleach, wood sealer, oxalic acid, wax, linseed oil, stain, or paint. It can be used with or without a container, in a horizontal or vertical position or

Daffodils

Chrysanthemums

several pieces can be fastened together. Driftwood is dynamic used alone or with plant material. It can be placed on the hearth of a fireplace, on a mantel, a table, hung in a window or set on the floor.

You don't have to live in a contemporary home to use contemporary arrangements. Their simplicity of style is adaptable to any home setting. The most important thing to remember is to use those plant materials you have discovered in any way that pleases you. Color is the signature of one, line is another, while spatial relationships may earmark another. Style, as a means of expression, is such an individual thing. It is vital to the creative process that each person free himself of any preconceived restrictions. Use what pleases you. Do not become an imitator. Try to use nature's gifts with distinction in your home as no one has used them before. As Liberty Bailey said, "There is no finality in the interpretation of nature." Along with moments of frustration you are certain to experience an unbelievable feeling of personal achievement and satisfaction.

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*Available on loan from PHS Library

Barbara Cramer is an accredited National Council judge, lecturer and teacher of flower arranging. She is a member of Hill and Hollow Garden Club and is the arrangement aides chair at the Philadelphia Flower & Garden Show.

Fixing Flowers in the Home:

USING ANTIQUES

by Mary Hirstius

There is a sense of history—of the continuity of life—in living intimately with the craftsmanship of our ancestors, whether it be painting, sculpture, furniture or the ordinary utensils of their everyday lives. Not the least of these treasures are the beautiful accessories that adorned their homes—the vases, figurines, flower bowls and glassware that have come down through families or appreciative collectors.

Antiques should be lived with and used, as well as lovingly cared for, because they have their own special needs. Furniture dries out, veneers chip and must be restored, and old glass becomes cloudy, and if water has been allowed to stand in it, a sediment will encrust the inside. The sediment can sometimes be removed in very delicate glass by a solution of common baking soda with a few spoons of raw rice, swished around in a little water. If that does not clear it up, use small smooth pebbles in place of the rice. The important thing is not to use an abrasive that might scratch the glass.

Flowers and antiques seem to complement each other, perhaps because our ancestors were very conscious of the importance of flowers in their daily lives. Even the stringent regime of our early settlers emphasizing using the land for growing food, allowed for an herb garden, not only for the necessary home remedies, but also for the sweet scented herbs that freshened the linen closets and repelled moths. The women gathered wildflowers and placed them about the house and so strong was their yearning for the beauty of flowers that they dried many varieties of wildflowers and grasses to enjoy throughout the long, cold winter. The colonists loved to use both wild and cultivated flow-

Blue canton is especially beautiful with white flowers— lilies, *Allium odorum, Gladiolus tristis* and ranunculus.

photos by Mary Hirstius

A linear design in an old Chinese bronze Koro. Orchids with *Corylus avellana* 'Contorta', the European hazelnut.

ers for decoration. Peter Kalm wrote in his *Travels Into North America* that the ladies gathered great quantities of life everlasting and put them in pots among other fine flowers, which they had gathered both in the gardens and in the fields. He added that they had flowers all summer long in or upon the chimneys, sometimes upon a table or before the windows, either on account of their fine appearance or for the sake of their sweet scent. Our own roadside goldenrod, which grows with such abandon in this country but is cultivated respectfully in England, is absolutely breathtaking in massed bouquets. I like to use it quite formally in an ancient Chinese bronze vase, sometimes with the addition of the lovely white *Eupatorium perfoliatum* or the orange-scarlet berries of the American cranberrybush, *Viburnum trilobum*.

Mixing Styles

So many times, when teaching flower arranging, I have been asked how to use a certain type of decorative vase. Some, of course, were made as strictly ornamental objects, and yet, it is astonishing how many lend themselves to really creative and lovely flower arrangements. In our home, we live with, enjoy and use everything, from the oldest to the newest, and we don't hesitate to mix the periods. Even the most traditional home benefits from the clean, strong lines of a modern arrangement. Likewise, the determined understatement of an entirely modern home can be lifted from monotony by the sudden introduction of a large, warm colored bouquet, perhaps in a Bennington crock, or a lovely lineal design in an old Chinese bronze koro. I think our ancestors must have felt that an object that is beautiful in itself is twice as beautiful when used as a receptacle for flowers, or in the case of a figurine, a miniature or even a beautifully bound book, as part of a grouping with flowers. One can create a still life to enhance a special part of a room, or point up and bring into focus a hitherto difficult corner. As far back as ancient Egypt, probably 1500-1450 B.C. containers were designed for flowers. Some, of bronze, had a band of metal soldered to the bottom of the basin, so that flower stems might be slipped through the loop and secured into place.

By the 18th Century in this country, gardening had become a gentleman's hobby and marvelous plants were grown and exchanged with European gardeners. Needless to say, these new varieties found their way into the parlors of the gentry in handsome bouquets. We can get an idea of the composition of these 18th Century arrangements from illustrations of the period. Sheraton's *Furniture Book* shows small bowls of flowers on several sideboards, but the large flower prints give the best information. Many were produced in England. Robert Furber, a Kensington nurseryman issued a catalog in 1730 which he named *Twelve Months of Flowers*. The flowers are botanically accurate and arranged according to the month in which they bloom. Every flower is numbered and at the bottom of the page its name is engraved, so that the whole forms a treasured key to the popular English flowers, among them American flowers that had been introduced at an earlier period. A set of these prints serves as a model for the arrangements in the buildings in Colonial Williamsburg.

Antique bowls and vases are loveliest, I think, with garden flowers. When the daffodils are in bloom, I like to fill a large Canton bowl with one or more varieties—in fact, all the shades of yellow are not too much for the intense blue of Canton. In using Chinese export or other fine porcelain for flowers, I always use an ordinary bowl with pinholder inside to protect the gloss of the enameling. Even when using such porcelain for dried flowers, I always place another receptacle within the old one to hold the necessary mechanics. A fine container is worth the extra effort of preservation.

Plants to Use

There are so many beautiful shrubs in spring that lend themselves to airy informal arrangements, not the least of which is the old-fashioned kalmia, or mountain laurel. The crisp, calico-like flowers of this faithful bloomer seem particularly at home for us in a pink lustered Sunderland pitcher, one of a "collection" of three.

Blue Canton is especially beautiful with white flowers. In summer, when the white lilies are in bloom, they can be impressively combined with various other white flowers from the garden, such as *Allium odorum, Gladiolus tristis,*

continued

The Victorians were very fond of epergnes – opalescent glass shading to deep purple at the scalloped edges. Purple plums in the lower dish and lavender to purple plant material in the vase. Haviland china in the violet pattern with contemporary goblets in mauve and clear glass.

etc. These same flowers, with the addition of white ranunculus, may be obtained from the florist in late winter. They look great on a chest of drawers or a coffee table.

A Chinese export fruit bowl filled with summer garden flowers such as geraniums, cosmos, celosia, with snow-on-the-mountain, informally arranged, evokes happy memories of grandmother's garden. Another centerpiece that I enjoy arranging is summer flowers in shades of pale pink to deep red—roses, fuchsias, geraniums and others—in a cranberry glass globe. Since the globe is open at the bottom, we place a cranberry glass finger bowl inside to hold the flowers. Combining it with old family Haviland china in the pink bridal wreath pattern makes a very attractive Victorian luncheon table.

A distinct departure from the above is the manner in which I use a set of Japanese Kutani porcelain—a buffet table with Tiffany brass candlesticks in dragon pattern and an old bronze sunabachi holding an Oriental style arrangement of Mid Century lilies in shades of cream to deep bittersweet, duplicating the colors of the gold encrusted porcelain. One of the joys of using heirlooms is the pleasure it gives others as well as its spur to daring feats of creativity.

Overdoing It

There is a time in the late summer garden when there is such an opulence of flowers that I feel compelled to rather overdo it when fixing bouquets for the home. Instead of several arrangements in a room, however, it is much more effective to create one huge smashing arrangement, and when such a variety of blooms are available, I love to use a document box, *circa* 1780, line it with foil, place a bowl within to protect the original paper lining, and really go to town with practically everything in the garden, including zinnias, marigolds, celosia, coleus, the delightful "berries" of the *Cornus kousa,* and many others. The arrangement looks handsome on an 18th Century Philadelphia chest, the old woods blending together and setting off the beauty of nature's bounty.

The Victorians were very fond of epergnes, and I sometimes use one in opalescent glass shading to deep purple at the scalloped edges. It is particularly effective as a centerpiece for a luncheon table with purple plums in the lower dish and lavender to purple plant material in the vase. Gomphrena, *Zebrina pendula,* with a touch of yellow celosia to contrast with the mauve tones are very pretty combined with Haviland china in the violet pattern on white organdy mats with contemporary goblets in mauve and clear glass.

Of all the shrubs available to us from the far corners of the earth, none is more satisfactory over a long period in our area than the *Cornus kousa*—an Oriental dogwood whose origin has been attributed to both China and Japan. It blooms about a month later than our native *Cornus florida* and differs in form in that the bracts of the

A document box, circa 1780, holding a variety of late summer blooms from the garden with the delightful raspberry-like fruits of the *Cornus kousa* at the focal area.

Cornus kousa are pointed rather than notched—also, it "flowers" after the leaves are fully open. When the bracts open they are a pale chartreuse, later turning chalk white and they remain for three to four weeks, finally turning a rosy pink before falling. As if this were not enough, the shrub is then enhanced by delightful raspberry-like fruits. The white bracts are so beautiful in themselves that one need nothing more to brighten a room than to mass them in an 18th Century bowl or tureen in the overflowing Williamsburg manner —what Richardson Wright called "the buxom bouquet."

Cornus kousa massed in an 18th Century tureen in the overflowing Williamsburg manner.

Pennsylvania Chalkware, sometimes referred to as "poor man's Staffordshire" was what its name implies, folk art objects made in the manner of the popular Staffordshire figures. Most of the figures were of animals or birds, and I especially like to use a Chalkware deer at Christmastime, with juniper and *Viburnum opulus* branches—a tiny chaplet of red viburnum berries adorning the throat of the reclining deer. Bringing the garden into the home throughout the year gives expression to our wonder of the beauty outdoors.

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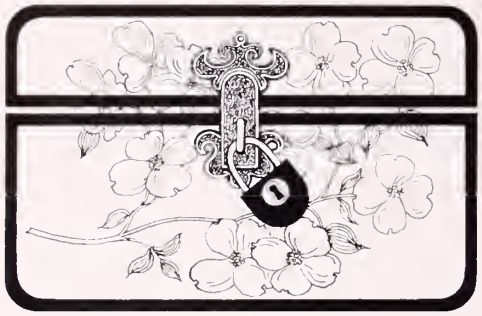
Mary Hirstius has been a member of PHS for many years. She has served on the Exhibits Committee, the Philadelphia Flower and Garden Show Schedule, Passing and Flower Arrangement Committees. She has created dried flower arrangements for the Bishop White House from its opening and for several years thereafter. With her husband, she enjoys gardening and antiques. She is a graduate of the Arboretum of the Barnes Foundation and lectures on Flower Arranging and Gardens of the 18th Century among other topics.



RESTRICTED PLANTS: Fact or Fiction

by Ed Lindemann

The saying goes that spinsters and bachelors make the best parents. As a casual flower arranger perhaps I fall into the same category when expressing my feelings about using certain plants when fixing flowers.

I can remember as a young boy walking with my grandmother in the woods on her farm and being told that it was against the law to pick a dogwood flower. To a child of five, the thought of spending the rest of my life in jail was terrifying. Those nature walks took place more than 30 years ago, and I know the dogwood population has increased on that property. Had I picked several bouquets a year I doubt that it would have greatly affected the welcome display of bloom each spring.

Today, as a horticulturist working in urban and highly populated suburban areas I am aware of what might happen if each of us picked several bouquets of uncultivated dogwood blooms. I believe that the word *uncultivated* is the key to the fact or fiction involved in using restricted plants.

Flower arranging books, gardening manuals and horticultural literature in general ignore the situation. Arboretums, botanical gardens and flower show administrators are aware of and watch the situation. Garden clubs, nature centers and wildflower preserves educate and enlighten the public on the situation. Arrangers in competition debate the problem. What am I talking about? I'm speaking about the use of rare, endangered, threatened and restricted lists of plants used when one is fixing flowers.

Those of us who garden or do flower arrangements or combine both talents may find it hard to believe that plants can become extinct when we see the acres of stock in nurseries, read seed catalogs or buy cut flowers from our florists. I think it is interesting and somewhat alarming to learn that 10% of the flora of the continental United States, a total of 2099 species are classified as endangered, threatened, recently extinct or exploited species. These statistics and their accumulation are a result of the Endangered Species Act of 1973 (Public Law 93-205)* that directed the Smithsonian Institution to prepare a list of endangered and threatened plant species.

Over half of the States have some form of list that has been prepared either by the state or local government, garden clubs or conservation groups. These lists are guidelines and no one list can be completely authoritative for the entire country. A species of plant that is extinct or very rare in one area may be abundant in another.

The term "restricted plant" is not precise and the following specific terms are more useful:

Rare – Species of plants that have been reduced to small populations within their natural ranges.

Threatened – Species of plants, which for some reason or other, are likely to become endangered within the near future.

Endangered – Usually refers to species that are in danger of extinction throughout a significant part if not all of their natural ranges.

Recently extinct – The end result when species are no longer known to exist. Occasionally plants that have have been lost in the wild may be preserved in cultivation such as the Franklinia.

Having read this far you are probably as confused by the situation as I am. Like the bachelor or maiden aunt with advice on child rearing, I offer my suggestions for using restricted plants when you are fixing flowers. First, let your conscience be your guide and use good judgment. Read as much as you can on the subject of endangered species and become familiar with those in your area. If you have the correct growing conditions for a known endangered species try growing it. Obtain the plant either from an organized plant rescue or a reputable nursery or specialized plant society. Do not obtain plants from commercial or private sources that strip them from their natural ranges with regard for nothing but a quick profit. Be aware of terms such as "Rare – Almost Extinct – Collected from the Wild" when reading advertisements.

The fact of the situation is that there is a problem with the exploitation, the unawareness of, and often the lack of interest in plants that are classified "restricted."

Fiction. I see no known reason why I cannot have a mass arrangement of mountain laurel *(Kalmia latifolia)* on my dining room table or use the petals of cardinal flower *(Lobelia cardinalis)* in a pressed flower picture. Why can't I have an urn of winterberry *(Ilex verticillata)* incorporated into my Christmas decorations or enjoy the fragrance of sweet bay *(Magnolia virginiana)* on the terrace table to add enjoyment to summer evening nightcaps? There is no reason. I've grown all of these plants in cultivated gardens, they are readily available in the trade from reputable sources yet they appear on a plant preservation list for Pennsylvania.

You see there is some fact and some fiction; what we need is a combination called common sense. We welcome your point of view.

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*94th Congress, 1st Session – House Document No. 94-51, *Endangered and Threatened* Plant Species of the United States, Serial No. 94-A (U.S. Government Printing Office, Washington, D.C.)

Fixing Flowers in the Home:

THE GOLDEN ROOM: YELLOW & ORANGE

by J. Liddon Pennock, Jr.

Was it simply an innate love of yellow flowers on my part or was it a burning desire to acquire a suddenly available collection of rare yellow English earthenware pottery that was responsible for the creation of our living room. Actually yellow is not my truly favorite color. Blue is usually the choice of those of us who have even fairly blue eyes. I have often been known to describe one whom I felt to be particularly ineffective as the person with the pale yellow voice.

In reality this golden sunny room had its inception in an entirely different way. In 1954 I found myself the newly elected president of the Pennsylvania Horticultural Society. The Society headquarters in those days consisted of an office, reception room with three desks, a board room and a rather large and barren meeting room, and a library.

Nothing could have been more dreary than those sad commonplace series of rooms in the Pennsylvania Railroad Suburban Station Building. At that time the living room at Meadowbrook Farm desperately needed a complete overhauling. The furniture was fine but the colors were basically enemies of flowers, mostly oriental rug colors. It would be impossible for me with my frugal Quaker background to have simply discarded the unworn curtains, rugs and upholstered furniture. To give them, however, to a worthy cause was totally permissible. What better repository than the PHS rooms. In short order we furnished the main meeting room with hand-blocked English linen curtains where none had ever hung before. A large refectory table, two oriental rugs and a Chinese chest were added. At last our headquarters no longer resembled a branch office of some lesser insurance company, and I was free to indulge myself in an orgy of creating a totally new living room at home (Meadowbrook Farm).

Nasturtiums, if allowed to spend their nights in a cold room or even a refrigerator at 45°, will last two, three or even four weeks.

The walls of the living room were subsequently covered with canvas painted a dark rich chocolate brown with slightly off-white trim. The Adam mantle is white marble with sienna slips thus complementing the woodwork.

The curtains are a vibrant yellow hung from valances of original Victorian wallpaper borders with a swirling leaf design. This motif is carried out in the needlepoint rug at the entrance of the room, as well as around the border of a plain white rug that occupies about one-third of the floor area.

The cabinets at each end of the room contain collections of yellow china, often highlighted in orange. The furniture is mostly 18th century, some original and some copies. The featured picture in the room is by Severn Roesen, an American who painted in the mid-nineteenth century. It blends exceedingly well with the plants and flowers that fill the room.

I had developed a basic interest in yellows and oranges predicated on my love of nasturtiums, clivia, forsythia, narcissus and many, many other flowers in these glowing colors. One has to be thrilled by our early spring spectacular, forsythia, the golden harbinger of spring, when it first bursts into bloom, filling our Pennsylvania countryside with pure yellow sunshne.

What is more exciting than drifts of

continued

photo supplied by author

Yellow nasturtiums create a sunny golden feeling in this room.

narcissus in the early spring with hybrid polyanthus primroses. In the midwinter primroses are forced into bloom in pots that make the plants resemble old-fashioned nosegays when used on a low table. Later on when they abound in the garden they form an excellent, long-lasting cut flower. It is important to remember that the tips of the stems of the primroses, helleborus, and poppies must be thoroughly seared by an open flame to prolong their survival in water.

White dogwood picked from a small nursery of blooming trees maintained on the property as a source of cut material for the house has been a must. Lilac, azalea and other blooming shrubs are included in the nursery. It is advantageous to cut this material to a considerable length as the longer it is cut the longer it lasts. The stems of such hard woody material should be crushed and a floral preservative added to the water.

A metal tray filled with pebbles is used at the base of the french doors. Some of the material set in the tray is golden *Celosia plumosa* in 4 in. pots combined with Jerusalem cherry or possibly *Pachystachys lutea,* and many of the lovely shades of the Swiss hybrid kalanchoe from yellow to deep orange, which continue to bloom for weeks. All during the fall chrysanthemums in yellow and bronze are used mainly because of their long-lasting qualities.

During the midwinter when the sun begins its ascendency we depend on nasturtiums as our main source of cut flowers. No line or design, no focal point, just masses of golden orange flowers everywhere. These are grown in hanging baskets in one of the cooler greenhouses together with several permanent beds of miniature carnations, which is another one of our favorites. They, too, if allowed to spend their nights in a cold room or even a refrigerator at 45°, will last two, three or even four weeks. Also in a special corner of a cool greenhouse we force yellow and brown pansies and yellow Marguerite daisies to be used for winter cutting.

The greenhouses at Meadowbrook Farm are primarily used for the small retail trade that we enjoy, but since we grow an infinitely varied crop of all kinds of house plants, we can pick and choose among flowering plants and even return them when the blooming period is over. You cannot fail to maintain a floral wonderland with such a resource.

Plants hang in every window; *Nemanthus radicans* is a favorite as it does not drop its spent blooms. Columnea 'Early Bird' or 'Yellow Dragon' both almost perpetual bloomers in the winter, are also a mainstay. *Begonia* X 'Orange-Rubra' or *Begonia limmingheiana,* though they do drop their flowers, are so lovely and mantain a long blooming period, as to be of importance also.

Paphiopedilum endures for such a prolonged period of time that it, like the tabletops, requires regular dusting.

Cymbidium orchids are a natural for this setting, and they don't seem to be affected by spending a month or so in an unlikely corner of the living room. When they are flowering they are not in active vegetative growth. However the moment the flowers are over we remove them to a cool moist atmosphere where they will be gotten ready to set flower spikes for the following winter and spring. Many other varieties of orchids contribute their particular personality to the room. Paphiopedilum endures for such a prolonged period of time that it, like the tabletops, requires regular dusting. White or yellow phalaenopsis, oncidium, miltonia, and odontoglossum in the proper orange, beige or chocolate brown colors all adapt themselves beautifully to this environment.

Despite the success of possessing a sunny yellow living room during the long cold stormy months of winter we look forward with great anticipation to the time in late spring when we do a complete transformation for the warm summer months from yellows and oranges to stark basic white. The change encompasses the furniture, slip-covered in a heavy cottom damask; white sheer curtains with stamped white metal valances and tie-backs; a rather nice collection of lacy Asian-Indian tables, chairs and a screen all painted white.

The paintings used in the winter are replaced by Carroll Tyson's prints of birds of Mt. Desert Island, Maine. The yellow china is replaced with white salt glaze, the pattern of which echoes the pierced open work of the furniture. We change the rugs, including the needlepoint one made with the help of a dozen talented friends. These are replaced with those made of reed from the Caribbean Island of Dominica. It is with this background that we can indulge ourselves in plants and flowers in all shades of pinks and red, purples and blues—but never yellow. Somehow, way back in my mind is that tiny tainted memory that yellow is my way of describing that rather ineffectual person with the pale yellow voice.

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J. Liddon Pennock, Jr. was PHS president from 1954-57 and served on the Council from 1948 until January 1978 and is still an active member of the Flower & Garden Show Committee. He is on the Advisory boards of Longwood Gardens and Ladew Topiary Garden (Monkton, Md.). Pennock is a member at large of the Garden Club of America and a member of the design committee of the Morris Arboretum.

ARRANGING AT THE SHOW

by Sarah C. Z. Groome

Doing an arrangement, design, or composition for any flower show is hard, and it is particularly hard for one the caliber of the Philadelphia Flower and Garden Show, because there is no other like it. It offers the public everything: a complete menu of beauty — gardens, specimen horticulture, window boxes, tables, rooms, and last but not least, rugged competitive classes in the arranging section.

Along with all of that is the gift to the exhibitors of wonderful competitors, helpful friends, and usually a violent case of the jitters.

To make it all clear I will explain some of the ins and outs of entering a class in the large niche, and describe some of the things that can happen to an arranger and that did happen to me on one occasion.

Anyone who feels that planning an arrangement for a major show, or even a lesser one, is a one night thing is absolutely nuts. Getting proper backgrounds, vases and bases of the right size and shape, choosing flowers to enhance the container or to tell the story of an interpretive class takes time and many tortured nights of tossing and turning. For some of us thinking is hard work, but sometimes the marvelous thoughts that come around 3 am solve mechanical problems beautifully — if you can remember the solution in the morning. (It might be a good idea to write it down.)

Do not despair. After weeks of mind-boggling changes what you want to do will suddenly jell. Having read and re-read the competitive class schedule over and over you will conclude that what you are planning to do really does follow the rules and requirements of the class to be entered.

Now comes choosing the color for the background. Be sure that it complements the design in tone and texture, and that it will bring out the shape, color, and form of your flowers. When you have it as you want it, also be sure that you put it somewhere that is flat, because a warped background is a hateful thing. I like mine between newspapers under the living room rug. That keeps it flat and the only risk is that the newsprint will rub off on a pristine

The author works within the large niche area at the Show. The frame opening is 34 in. high, 36 in. wide and 18 in. deep. She is arranging gladiolus and fantail willow *(Salix sachalinense* 'Sekko').

photos by Edmund B. Gilchrist, Jr.

background, but it doesn't do that very often.

Next, if you do not have a greenhouse, off to the florist with your advance order for what you think you want to use—along with alternate choices, because a blizzard or an airline mix-up can change your entire way of arranging. Practice your design at least once or twice before "the night before." There is no need to buy beautiful flowers for practice; anything will do as long as it fits the design. The end is in sight; there is light at the end of the tunnel. Put the thing together, and if it suits you and is beautiful, leave it.

Finally, make a list of everything you need for your mechanics, collect everything on the list, and put it all in the car the night before the show. Put all your live plant material in water until next morning, being sure to have a duplicate set of leaves and flowers in case of mishap. Eat lightly and get to bed early. Why? Because it is better to fidget prone than standing.

In the morning you will try to eat breakfast and will not be able to swallow, and no amount of coffee will ease the dry mouth. But you are off and on your way, with the flowers checked and carefully packed, and the forced conversation in the car will finally end when you get to the show.

It is at this point that it becomes necessary to deal with your background for the big niche. It is 48 in. high and 25¾ in. wide. It is hard to carry on a windy day, and if it is made of posterboard a gust of March wind can double it up and leave a crack that is not smiled upon by the austere Passing Committee. If it is less pliable it can act as a balloon jib and pull you along at a terrifying speed in any direction. In any event carrying it, the tool box, other accessories and flowers up the stairs and down the escalators is quite a feat.

Now, let's assume that you have safely reached one of the entrances to the show. Find a dolly and lay everything on it flat—the easiest procedure. But beware; the dollies have minds of their own, go only where they want, and have a dedicated habit of chasing the operator and biting her ankles. Anyway, after zigging and zagging your path to the niche section the fun really begins. It is now *the* hour.

Quivering like an aspen you choose the first niche that has been emptied from the previous day's exhibit and put your background in first—praying that you have it cut to the right size. Clamp it securely at the top so that it will stay upright and will not fall over and destroy your arrangement. Then put in your sides (if you use them) tightly secured by masking tape. Now the floor should slide in. If it does not seem to fit, do not have a nervous breakdown; just put one side in and then lower the other side with a good whop! That should do it.

Next, place your base and container where you planned to put them. Remember which side came to the front, which was right and which was left.

Everything is now set to start the arrangement. Don't push the panic button. Remember you have the longest stem for the top of the design—it really is in the box somewhere. Don't fret if it is broken. Improvise. Change. Stop, look, and smoke! Relax. It's only a flower show, and it's all supposed to be fun.

Your neighbor, seeing your panic, places her box of flowers on your fragile calla lilies (mine). "Oops, sorry!" It was not done viciously but by accident, and you are left to arrange three callas that are bruised and not in "show" condition. Two strikes against you to start with.

Well, onward and upward. The design works fairly easily, except as you put a piece of lava rock in the niche you grab it convulsively and a hundred small bleeding cuts seem to pop up, spraying the background and floor a lovely red. None gets on your already damaged lilies, and cleaning up is simple as the back and base are plastic.

The finished product, although not triumphant, is passable. A wandering eye takes in the competition, and you feel sure that even though it is not a winning design it is in the running. Error creeps in here.

You turn to get some water for your fading callas, then turn back to your near work of art. Alas, it lies against the background, the lava on its side crushing the long suffering lilies. Someone was hammering on the back of the niche. Disaster!

Gingerly you try to redo the mess, place a leaf where it should not be, turn on a blue spot, and—all competitive spirit gone—call for the Passing Committee as fast as possible, hoping that the lilies will not be noticed.

The interpretation was of Iceland and it did look cold and bloody volcanic, but the judges said, "That leaves me cold" as they studied it. At this remark a kind fan said in a loud voice, "Well, shouldn't it? It's Iceland after all."

A third prize was more than I deserved, but the blood letting made me a less nervous person when I showed again the next day.

It was a day at the Flower Show not to be remembered. As I have said before, *always* have duplicate flowers. And after that experience I stress the need to wear gloves if you are working with lava rock. The result will be a cleaner and less painful composition.

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Sarah Groome has been a competitive arranger for almost 30 years and has won the Helen Hope Dechert award three times. She conducts workshops every year for a couple of months before the Show. They are free and are open to any arranger (new or old) who wants to come to them. She is a Garden Club of America judge, and lectures on arranging. She was awarded the G.C.A. Medal of Merit, "In recognition of her artistic ability in creating flower arrangements of great beauty, and her skill in conveying to others her knowledge, interest, and buoyant enthusiasm."

1000 KUMQUATS OR ORANGE RANUNCULUS: about a source for exhibitors and home arrangers

by Marilyn B. Peterson

It is nice to know, if you have limited growing facilities for flowers, that you can purchase blooms to use in your arrangements. For this reason, many flower arrangers put their hopes and dreams into the hands of establishments like George Robertson & Sons.

Robertson's, located in Chestnut Hill, has been procuring usual and not-so-usual cut blooms to sell to local arrangers for many years. The intensity of this service reaches its annual peak in the few weeks surrounding the Philadelphia Flower and Garden Show, since they supply many competitive arrangers with flowers.

I spoke with Bruce Robertson, who has been involved with the family business for 20 years, about this facet of their service to customers. It was the day after the closing of the 1978 Flower Show and he talked about some of the experiences of that monumental effort.

"This year was the worst for getting flowers," he reflected. "The rains in California made it almost impossible to get many of the types of flowers grown in the southern part of the state. And, if they did ship the flowers, they would arrive with mildew in the boxes. It was terrible.

"You just can't get the mildew off them. We have to throw the flowers out. We deduct it from the supplier's bill and try to get a credit for the damaged flowers. Mildew occurs when growers pack the flowers too tightly in the box. Cut flowers generate heat and where the air doesn't get around the flowers, that part of the box becomes mildewed.

"Normally," he explained, "we can call the California flower market, which is open from 1 am to 6 am, on one day and we have the flowers in Philadelphia the next morning. This year, we had to rely more upon other markets."

So, Robertson's attention turned toward Holland — one of the largest flower markets in the world. This source offered lilies of the valley, many bulbous flowers (tulips, hyacinths, daffodils, etc.) and flowering woody plants like quince, lilac and forsythia. Because Holland's seasons are a few months in advance of ours, many of these blooms are in plentiful supply from their outdoor growers when it is late winter here.

"Holland growers really know how to pack a box of flowers," Robertson said. "They make it an art. The gerbera come in with tiny little plastic collars!"

Local Growers

Of course, the Delaware Valley area does have its share of growers who force flowers for cutting. Roses and carnations predominate these greenhouses, with iris and tulips becoming available in January. Orchids are also grown in the area. Florida is another source of cut flowers and greens.

"One of the most important things in this business is to know where to get things," Bruce notes. "If someone comes in and asks us for a certain type of flower, if it's grown and it's in season, we can find out in a half-hour where we can get it. We pride ourselves on going to the end of the world to find what is needed."

"I thought it would be great to have things people had never seen before. Here it is, the day after the show, and we still haven't seen the box he sent us."

Sometimes, however, even the best-laid plans go astray. A box of flowers, air-freighted from one side of the world to another, may sit, unprotected, in an airport in sub-freezing temperatures. Another time, a carton from Holland might include an insect that causes the entire shipment to be condemned at customs.

It's not only the customers whose plans are disrupted. "Months ago," Bruce related, "I heard about this guy in Hawaii who went back into the wilds and brought out unusual flowers and foliage. Since our display for the show was a tropical island, I thought it would be great to have things people had never seen before. Here it is, the day after the show, and we still haven't seen the box he sent us."

Adaptability may be the key to success for many flower arrangers. Although competitors plan their entries months in advance, the distributors can never guarantee that a particular type of flower or a shade of a color in a flower will be available at show-time.

Accordingly, "although arrangers may practice with certain types of flowers to see how much space they will take up and how best to arrange them, they may have to completely readjust their plans on the day of the show," Bruce explained. "It's really a challenge when you're dealing with nature.

"The customers always adapt, somehow," he added. "Arrangers just don't get themselves into a situation where they need an orange ranuncula or they don't go into the show."

Tracking the Kumquat

People do sometimes triumph. Robertson's was asked to include kumquats in their 184 arrangements for the preview dinner. How they managed it is a tale of perseverance.

"We knew it would take about a thousand kumquats to make the arrangements — they're a very small fruit," Bruce narrated. "Fruit wholesalers told us they were out of season and couldn't be gotten. We tracked them down through five people in Florida who grew them and finally found a small grower who could sell us some. It was a guy and his brother, and they just wanted to do it. After all their work to grow them, they only asked for $8 for a bushel of kumquats. They even drove them 100 miles to the nearest airport!"

Part of the reason that Robertson's can provide this selection for its customers is that it has a large enough establishment and it deals constantly with many growers. "They know what we want," Bruce confirmed. "Then, the people can come in here and take out what (specific) flowers they want. Sometimes they're even here when the boxes arrive and they help us unpack. On the days of the show, some stop in at 7 am to see if we've gotten anything more in that they could use in their arrangements.

"Some people spend over $100 (on flowers) for one arrangement. Others come in and buy leaves that only cost $1.50. The flowers can range in price from 20¢ apiece to $20 each. Some sprays of orchids, for example, cost $10 or $12 apiece (each spray has a number of little flowers on it). Calla lilies are currently $25 to $30 a dozen. Daisies are at the other end of the scale, costing about 20¢ each."

In terms of quantity, Robertson's may only sell two boxes worth of flow-

ers for the spring show, but a box includes 60 to 70 pounds of flowers. "It's not the quantity of flowers," Bruce said, "modern arrangements may require very few. We have people come in and go through hundreds of flowers looking for stems, naturally bending a certain way, that will fit in with their arrangement."

During our visit, we asked Bruce for any prize-winning tips he might pass on to potential competitive arrangers. "Judges don't give points for the unusualness of flowers," he began, "but some of the more majestic flowers like lilies seem to be used more successfully than, say, carnations or chrysanthemums.

"Texture is important, too. You may say that some flowers are more striking than others to use, but I wouldn't say that some win more than others."

Sometimes, a local arranger's prize-winning ideas are later translated by the commercial arrangers. "A woman called," Bruce related, "who had seen a very modern arrangement of calla lilies in a lucite box at the flower show. She was planning a party, and asked us to do 25 arrangements like the one she saw. People often look for unusual ideas like that to make their parties distinctive."

Robertson's, naturally, is not the only local florist that is used by area arrangers. Pennocks (center city Philadelphia), Rothe-Woltemate (Mt. Airy), Santo (Suburban Square), and Waterloo Gardens (Devon) and other members of Allied Florists are also mentioned as sources.

Whatever the season, local florists can obtain flowers from markets in California, Florida, Holland, South America and Israel, by working through growers they know or through flower brokers in the area. For flower arrangers here, it can be an eternal spring, or summer, or fall.

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Marilyn Peterson is a free-lance journalist whose work most frequently appears in the *Chestnut Hill Local.* An avid pteridophile (fern freak), she spends many volunteer hours in the tropical fernery at the Morris Arboretum. She is a former president of the Delaware Valley Fern Society and was a member of the Passing Committee for the 1978 Flower and Garden Show.

Drying Flowers for Color Throughout the Year

by Rita Precopio and Helen Knauff

A gardener's fondest dream is to enjoy the beauty of summer flowers during the bleak winter months. House plants are great, but a bouquet of roses, zinnias and marigolds really give a lift. New techniques now make it possible to have more than memories of last year's garden.

Preserving plant material is deceptively simple; it's collecting enough suitable, complementary flowers and storing them properly that is difficult. The most important step is to start with the right varieties, because some flowers don't dry well and others are so fragile they have limited use. The goal is to have ample quantities of durable flowers with lots of variation in color, size, form and texture for arranging in the fall. We recommend a basic list of 18 plants (see box) that will provide greater diversity with the least trouble.

BASIC PLANTING LIST

Drying method: (A) air drying, (S) sand and (SG) silica gel

Annuals — seed sown directly in garden:

Helichrysum spp., dwarf strawflowers 15 in. (A)

Celosia cristata — Floradale or Prairie Fire (A)

Zinnia — Cut and Come Again and Persian Carpet (S)

Gomphrena globosa, globe amaranth (A)

Larkspur (SG)

Marigold — Petite, Bolero, primrose Climax (SG)

Annuals — seed started indoors in April:

Helichrysum spp., strawflowers 30 in. (A)

Marigold — yellow Nugget; for good germination give strong bottom heat to seed tray (SG)

Perennials:

Anaphalis, pearly everlasting (A)

Achillea, yarrow — tall varieties (A)

Shrubs:

Roses, Polyantha — The Fairy and Seafoam (SG)

Roses, Floribunda — Gene Boerner and Ginger (SG)

Hydrangea paniculata 'Grandiflora,' Pee Gee or *H. arborescens*, hills of snow (A)

Weeds from the Fields:

Solidago sp., goldenrod — good in early and mid-September, pick when half open (A)

Eupatorium rugosum, white snakeroot — pick in bud (A)

Rumex sp., dock — begin picking in May when green and continue until dark brown in late July (A)

Plan to Buy:

Perennial *Gypsophila elegans*, baby's breath (A)

Limonium tataricum, German statice (A)

Statice sinuata — blue (A)

Cultural Information

Strawflowers are one of the most important flowers for drying because of their durability and great color range. Locally grown strawflowers seldom exceed 2 in. in diameter, and generally the dwarf varieties give smaller flowers. Dwarf straws are attractive in the flower garden, but tall forms are best grown in the vegetable garden because of their coarse leaves, sprawling habit and heights, which sometimes exceed 6 ft.

Space plants 15 in. apart in rows at least 3 ft. apart. For support, drive heavy 6 ft. stakes about 6 in. to the right and left of the rows at intervals of about 10 ft. By stringing twine or long sticks along the stakes at various heights, an enclosure is made that supports the plants as they grow. If the main stem is tied to the twine, the plants cannot fall sideways. When only a few plants are grown, a stake can be driven between every two plants. Some dwarf plants need light staking. To reduce fungus problems, avoid mulching too close to the stems. Strawflowers should be picked at midday and before they are fully open (the center must not be visible) because they will continue to open as they dry. Wiring, if desired, must be done when the strawflowers are fresh, although blooms may be stored several days in plastic bags in the refrigerator.

We find it necessary to experiment with different varieties of each flower. For instance, Nugget marigolds dry and store better than other intermediate size marigolds, and primrose Climax is superior to other large ones, including

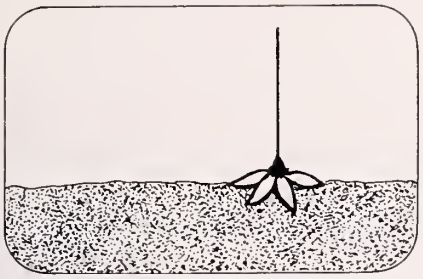

Fig. 1. Drying agent in mounds

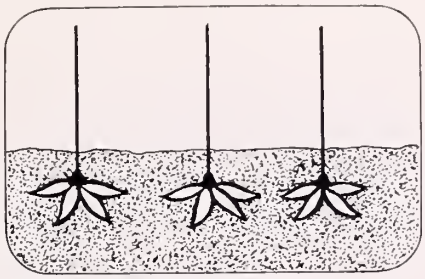

Fig. 2. Completely covered

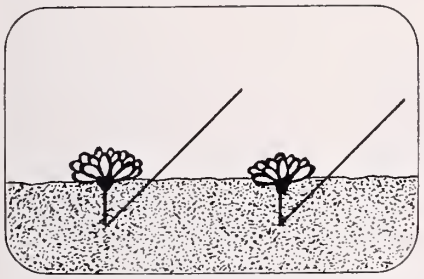

Fig. 3. Wire stem bent up just below natural stem

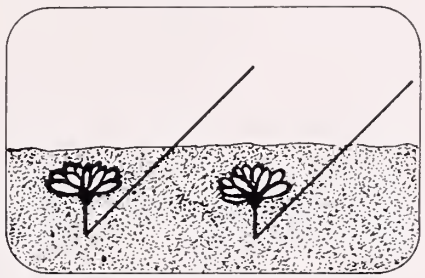

Fig. 4. Completely covered

Helen Knauff and Rita Precopio began drying flowers as a natural extension of their first love, gardening. For the past seven years they have staged an educational exhibit, "Creating with Natural Materials," at the PHS Harvest Show. Knauff lectures on this subject and Precopio conducts workshops on dried flower arranging. They have also co-authored a booklet, *A Gardener's Guide for Drying Flowers.*

the other Climax colors. Furthermore, they all dry better in late summer.

It is important to pick flowers at different stages of maturity. Roses may shatter when full blown, while marigold centers may turn dark when not fully mature. Many zinnias dry well, but results are usually best with small or medium flowered zinnias, which are not fully double. We especially like linaria and creeping zinnia *(Sanvitalia procumbens)* because they are so delightful in the garden and dry superbly in sand.

Drying Methods

Air Drying

1. Watch timing—gather most materials just as they become mature.
2. Select and dry twice as much material as you think you will need because flowers shrink in drying.
3. Work on a warm, sunny day—plants must be dry.
4. Strip foliage from stems.
5. Tie stems into small bundles and hang flower heads upside down in a dark, dry, well-ventilated place. For a graceful drooping effect try drying some plant materials (silver king, goldenrod and grasses) in a container.
6. Allow about two weeks for most materials to dry.
7. Air-dried material can be stored by laying bundles in a box.

Air drying is a good method with the following flowers: silver king; celosia, both plume and comb; dusty miller; gomphrena; lonas, pearly everlasting; rose hips; *Salvia farinacea;* strawflowers; yarrow and most weedy materials including pods, grains and grasses.

Drying in Sand:

1. Purchase white playbox sand (**not** builder's sand) from a hardware store.
2. Select only fine specimens; drying will emphasize most flaws.
3. Condition flowers by placing stems in water for several hours, or until the petals are turgid. The flower exterior must be perfectly dry.
4. Select strong, medium-sized boxes, e.g., shoe boxes, and cover bottom with about one-half inch of sand; use more if flowers are to be dried face up.
5. Place daisy-shaped flowers (wired if desired) face down in a single layer so they are not touching each other. To avoid a flattened look, a small mound of sand may be poured to support the center and give a slightly cupped appearance (see figures 1 and 2). Flowers with curved petals (e.g., some zinnias) should be dried face up to preserve their natural look. A short stem or bent wire is necessary for this position (see figures 3 and 4).
6. Carefully sprinkle sand, tapping bottom of container occasionally, until all flowers are covered. If flowers are not wired, add more sand to support the natural stem, which can soften and bend during drying.
7. Put container in dry place for several days to two weeks depending on temperature and size of flowers. Label with date and contents. Containers are **never** covered when drying in sand.
8. When flowers are dry (check one flower to be sure), carefully pour off sand and lift out flowers. Gently tap stem or use a soft artist's brush to remove any remaining sand or dust residue.
9. Store items upright on a piece of styrofoam in a cool, dry place away from light, **or** dip as recommended under "Problems."

Preserving plant material is deceptively simple; it's collecting enough suitable, complementary flowers and storing them properly that is difficult.

These flowers dry well using this method: black-eyed Susans, daisies, Queen Anne's lace, zinnias, leaves and ferns.

Drying in Silica Gel Crystals: *

1. This procedure is similar to the sand method **except** items must be dried in airtight containers, such as coffee cans, cookie tins or plastic refrigerator containers. Silica gel is a granular desiccant that removes moisture from the plant material as well as from the air. It is expensive but can be used indefinitely. When small blue crystals in the mixture turn pink, moisture has been fully absorbed. To renew its drying power, place gel in flat pans and bake at about 250° for half an hour or more until indicator crystals turn blue again. Remove and immediately pour into airtight storage can. When cool, it is ready for use.
2. Select properly conditioned flowers and surround them with silica gel crystals as described in steps 1, 2, 5

continued

*Silica gel is marketed under different trade names, e.g., Flower Dri in this area.

and 6 under "Drying in Sand." Most flowers, including roses, dry best face up; some flowers such as larkspur can be laid out horizontally in long plastic containers.

3. Put on airtight lid labeled with date and contents. Depending on size and form, flowers require from three to eight days to dry. Overdrying is not a problem.
4. Remove flowers as described in step 8 of sand method.
5. Store most flowers dried by this method in a sealed, airtight container with a half cup of silica gel. This step is especially important during hot, humid weather. Check about every two weeks and replace with dry gel if necessary.

Some of our favorites for the silica gel method are: yarrow, ageratum, *Anemone japonica,* delphinium, belladonna hybrids, button chrysanthemums, carnations, double feverfew, larkspur, marigolds, mock orange, mushrooms, nigella, open-face snapdragons and peonies (especially Saunder's hybrids).

Problems

Flowers that dry readily in air are called everlastings, but only plastic lasts forever. Our arrangements made in late fall change very little until summer when the humidity becomes high. Some arrangements age gracefully and last for several years, others must be replaced after the first summer.

The enemies of dried materials are humidity, high temperature, strong light, dust and insects. Excessive light and temperature often fade colors, but humidity may destroy both color and form. As we have already noted, but it bears repeating, delicate flowers must be protected from summer humidity by storing in airtight containers with about half a cup of silica gel crystals. Check occasionally and replace when indicator crystals turn pink. Most of the flowers we work with can be treated by dipping them in a 50% solution of colorless satin-finish varnish or lacquer, so that humidity does not affect their form. The coating material is diluted with the solvent recommended on the can for cleanup. Do not use water-based varnishes. The flower dipped in the solution is stuck upright in the edge of a corrugated box until dry. Preserved blooms must be

. . . only plastic lasts forever.

crisp and dry and the humidity low for dipping to be successful. The dipping procedure cannot be used on everything, but the roses, zinnias and marigolds recommended on the basic list respond well to this treatment. Because flowers react individually and the formulations of the coatings and solvents vary so much, it is difficult to make specific recommendations. Generally, varnishes are preferred coatings for zinnias and daisy-shaped flowers, while lacquers are better for roses and marigolds. Be sure to use adequate ventilation if flowers cannot be dipped outdoors. We have used plastic sprays and hairspray with limited success. Commercial formulations change frequently, so it is difficult to predict the effect of a specific spray.

We store most flowers by sticking the wire or natural stem into a one-inch thick piece of styrofoam glued to the bottom of a box. Slip the box of flowers in a large plastic bag for protection from light, dust and insects.

Insect damage is usually caused by the larva of a beetle, which causes the affected flowers to fall apart. You can prevent this problem by putting arrangements in the freezer for 24 hours several times a year.

Fading and color change are vexing problems. Flowers often darken during drying, so it is best to begin with lighter shades. The colors of some flowers are unstable and fade quickly. We sometimes use floral or flat hobby paints to restore the color of some flowers, such as Cut and Come Again zinnias and pink and yellow roses. If you can find paint close to the original color and use it sparingly, the effect is reasonably good. Remember, artificial coloring is not allowed when flowers are to be used in competition.

Since stems become fragile during drying, flowers are often wired. The wiring must be done when flowers are fresh. We use 24 gauge green wire for most material. Retain a portion of the natural stem (½ in. for heavy-stemmed strawflowers and 3 to 4 in. for hollow-stemmed marigolds or zinnias). Insert a straight wire through the stem until it engages the center of the flower. For very large flowers, it may be necessary to push the wire through the center, make a small hook and pull the wire back down until the hook is hidden in the flower. A heavier wire may be required.

When arranging dried flowers short stems or wires may be extended with thick sticks or pieces of wires. Gently but firmly wrap the stem and the stick

photos by Helen Knauff

Left basket: Basket ready for arranging. *Center basket:* Spike material of dock, goldenrod, larkspur and "fill" (which covers the oasis) of hydrangea, Prairie Fire celosia, anaphalis. *Right basket:* Gene Boerner roses, Seafoam roses, Cut and Come Again zinnias, Persian Carpet zinnias, Nugget marigolds, pink gomphrena, strawflowers, German statice. (*Note:* bottom edge is finished with strawflowers and other durable material.)

Creeping zinnia, goldenrod, white snakeroot, ironweed.

Ginger roses, larkspur, pepperweed, Achillea the Pearl, blue ageratum, gomphrena

Saunder's hybrid peonies, lilacs, Rose Empress celosia, strawflowers, anaphalis, blue ajuga, double feverfew, air-dried and glycerinized Baptisia foliage.

or wire (overlapped about one inch) with floral tape.

Except for the accomplished arranger, we recommend beginning with comparatively durable flowers, such as those on our basic list, arranged in small baskets and bowls.

1. Fill container with dry oasis (not instant) shaped so it extends about one-half inch above the edge. Secure the oasis with tape if necessary.
2. Use a small amount of spike material (e.g., larkspur or goldenrod) to create a rough outline of the arrangement.
3. Add flat materials such as hydrangea and celosia close to oasis to cover it.
4. Place the larger more delicate flowers so that nothing touches their petals. Carefully add other flowers, watching texture as well as color.
5. Add additional spike and airy material as desired.

Should your first efforts fall short of your expectations, don't be discouraged. Try again. Start with the plants on our basic list and continue to experiment with all your garden favorites. Drying is a wonderful hobby; we hope you will find it rewarding.

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Consult these books for more detailed information.

The Art of Colonial Flower Arranging. Jean C. Clark. Princeton: The Pyne Press. 1974.

The Decorative Art of Dried Flower Arrangement. Georgia S. Vance. New York: Doubleday & Company. 1972.

A Gardener's Guide for Drying Flowers. Helen Knauff and Rita Precopio. 1974.

The Step-By-Step Book of Dried Bouquets. Roberta Moffitt. Columbus, Ohio. 1975.

All are available at The Pennsylvania Horticultural Society Library.

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THE green scene

Index to Volume 6, September 1977 through July 1978 (listing shows issue date and page number).

SUBJECTS

AUTHORS

Yarrow in late June *(Achillea filipendulina)*.
See story on page 7.